

Cassette Car Radio 22 DC 795/23

Service
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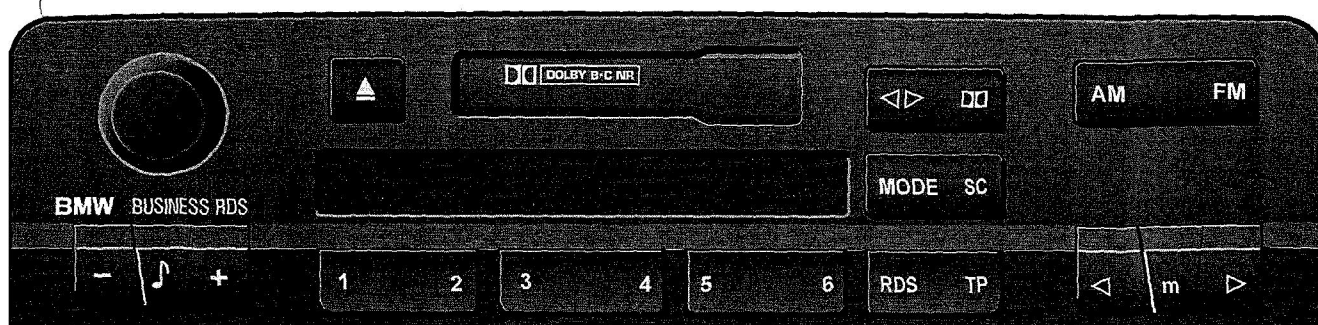
For repair information of the tape deck see Service Manual SCA 4.4 (4822 725 23509)

4703 #

1025/163

Service Manual

12 V 



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PCS 89 003



PHILIPS

CONTENTS

PAGE	2	TECHNICAL DATA
	3	CONTROLS
	4	THEFT PROTECTION, ESD WARNING, CONNECTOR BLOCK
	5	SERVICE MODE, DEFAULT SETTINGS
	6	CHECK + ALIGNMENTS
	7	WIRING DIAGRAM
	8	PWB FRONT
	9	CIRCUIT FRONT
	10	PWB MAIN – A SIDE VIEW
	11	PWB MAIN – B SIDE VIEW
	12	CIRCUIT: IC96 TUNER, IF BUFFER, RDS, PAUSE, AQF
	13	CIRCUIT: SOFAC, CD INPUT, AF POWER STAGE
	14	CIRCUIT: SCA DECK, PREAMPLIFIER, MSS, DOLBY
	15	CIRCUIT: MAIN PROCESSOR, EEPROM, I-BUS, TEL. MUTE, EXT. KEY, FRONTCONNECTOR
	16	CIRCUIT: POWER SUPPLY, ON-OFF LOGIC, CONNECTOR BLOCK
	17	EXPLODED VIEW, LIST OF MECHANICAL PARTS
	18–21	LIST OF ELECTRICAL PARTS

TECHNICAL DATA

Power supply

Supply voltage:	13.2 V nominal
Quiescent current:	≤ 2 mA (after 20 sec. with only perm.+ and GND connected)
Maximum current:	4.5 A (Radio mode, 4x4 W output)

Tuner

FM frequency range:	Europa	87.5–108 MHz
	US	87.7–107.9 MHz
FM search grid:	Europa	500 KHz (auto search) / 100 KHz (manual search)
	US	600 KHz (auto search) / 200 KHz (manual search)
MW frequency range:	Europa	531–1602 KHz
	US (AM)	530–1710 KHz
MW search grid:	Europa	9 KHz (auto search / manual search)
	US (AM)	10 KHz (auto search / manual search)
LW frequency range:	Europa only	153–279 KHz
LW search grid:	Europa only	9 KHz (auto search) / 1 KHz (manual search)
Presets:	6 (FM1), 6 (FM2), 6 (FMA), 6 (MW), 6 (LW)	
Input impedance:	75 Ω (use the respective dummy aerial for measurements and alignments)	

Cassette deck SCA 4.4

Number of tracks:	2 x 2
Tape speed:	4.75 cm/s
Winding time:	≤ 100 s (C60)
Wow & flutter:	≤ 0.3 %
S/N ratio (Dolby off):	FE 48 dB weighted CR 53 dB weighted

Amplifier

Output:	4 x 16 W (at 10% THD)
Bass:	± 12 dB (4 x 0.5 W at 90 Hz), 2 dB steps
Treble:	± 12 dB (4 x 0.5 W at 10 KHz), 2 dB steps
Telefon mute:	> -40 dB

CONTROLS

- *Push*: ON/OFF
Turn: Volume adjust
- △ Eject cassette (also when set is switched OFF)
- < > Track 1 (TAPE 1) or track 2 (TAPE 2) selection during CASSETTE mode
- ☒ ® Dolby selection (® Dolby off, ® Dolby B or ® Dolby C)
- AM AM band selection between MW and LW
- FM *Short press (<2s)*: FM band selection between FMI, FMII and FM-AST
Long press (>2s): store 6 strongest stations in FM-AST
- MODE** RADIO-, CD- or CASSETTE- mode selection (CD operation only if CD changer is connected)
- SC *Radio mode*: Scan strongest radio stations (with increasing frequency)
CD mode - Short press (<2s): Scan all titles of the selected disc
CD mode - Long press (>1.5s): Enable Random Play (shuffle) over all discs
- Decrease BASS, TREBLE or SPEED VOLUME, FADER to rear, BALANCE to left
- ♪ *Short press (< 2s)*: Selects tone control (Bass, Treble, Fader, Balance, Speed volume)
Long press (>2s): Linear mode enabled (all tone controls in the center position, Speed volume = 3)
- + Increase BASS, TREBLE or SPEED VOLUME, FADER to front, BALANCE to right
- 1...6 *Radio mode - Short press (<2s)*: Select stored station 1...6
Radio mode - Long press(>2s): Store actual station on preset 1...6
CD mode: Select disc
- RDS *Short press (<2s)*: Switch on/off Radio Data System (PI, PS, TP, TA, EON, AF, PTY data are evaluated)
Long press (>2s): Toggle between REG ON and REG OFF (regional program reception enable/disable)
- TP *Radio mode*: Switch ON/OFF Traffic Program (only stations with TP or EON are selected)
Cassette+CD mode if TP ON: Interrupts playback and switches to traffic announcement
- < m > *Radio mode*: >: search up, <: search down, m + >: manual search up, m + <: manual search down
Cassette mode: >: MSS forward, <: MSS backward (mutes > 3s are detected)
m + > or > + >: fast forward wind, m + < or < + <: fast rewind
CD mode: >: next track, <: previous track (n times - n tracks)
m + > or <: fast playback forward or backward as long as > or < is pressed

The following functions can also be controlled by the BMW steering wheel control via I-BUS:

- Volume adjust
- Preset scrolling up / down
- automatic search up / down
- Cassette MSS up / down
- CD track up / down

THEFT PROTECTION

The theft protection is realised via I-BUS communication. After every power interruption the set waits for an I-BUS telegram. During that period or if no data are received the display shows - DISABLED - and set can not be controlled.
Every valid I-BUS telegram puts the set into operation.

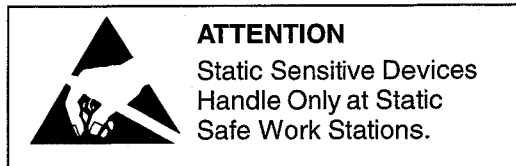
The active theft protection is indicated by a LED which is blinking when ignition is OFF.

For service purposes you can connect the I-BUS line of another BMW module (e.g. IRIS display 22SY686) to the I-BUS pin (connectorblock pin 7). You have to pull-up this I-BUS connection with a resistor 4K7 to power supply (12 V).

You can also enable the set with help of the EEPROM TOOL KIT 4822 395 10297. Follow the instructions in the file 795_23.txt of the respective eeprom data diskette.

WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair may reduce life time of these components drastically.

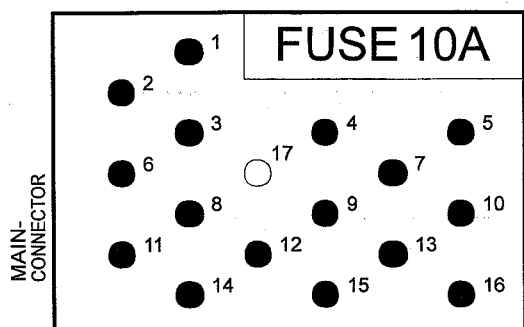


When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

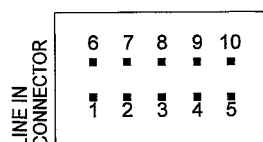
Appropriate ESD equipment can be ordered under followings service codes:

• Anti-static table mat	large 1200 x 650 x 1,25 mm	4822 466 10953
•	small 600 x 650 x 1,25 mm	4822 466 10958
• Connection box (1 MΩ)		4822 320 11307
• Complete kit ESD3		4822 310 10671
• Wristband tester		4822 344 13999

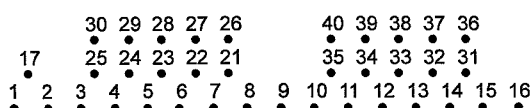
CONNECTORBLOCK



1: FL+	> 1	10: GALA(SDVC)	>14
2: FR+	>17	11: FR-	> 4
3: RL+	> 3	12: RL-	> 7
4: TEL.MUTE	>10	13: EXT.ILL.	>11
5: IGN.KEY	>13	14: RR-	> 6
6: RR+	> 2	15: GND	> 9
7: I-BUS	>12	16: SWITCHED+	>15
8: FL-	> 5	17: N.C.	> 8
9: PERM.+	>16		



1: EXT.INL+	>30	6: EXT.INL-	>25
2: EXT.INR+	>29	7: EXT.INR-	>24
3: N.C.	>28	8: N.C.	>23
4: N.C.	>27	9: N.C.	>22
5: N.C.	>26	10: N.C.	>21



SERVICE MODE

Enter: Switch set ON and press **m** button within 8 sec. for 8 sec., set will switch to tuner mode with TP OFF.
When the set is in 'DISABLE' status (see chapter THEFT PROTECTION) the serial number is the only parameter which is shown.
Leave: Switch set OFF.

With the + and - keys you can scroll the different parameters (written values are for instance):

<u>Serial number</u>	SN	T1003456	
<u>Software version</u>	SV	12-96 67	
<u>Speed volume</u>	GAL 3	(default)	with < and > keys or the preset buttons speed volume can be changed

Station indicators

When reaching this mode you can control the set as usual in normal tuner mode with buttons **m**, **<**, **>**, **1**, **2**, **3**, **4**, **5**, **FM**, **AM** and **RDS**. The station dependend parameters will be displayed.
With preset button **6** you can scroll different station indicators:

Freq./fieldstrength/qual.	103.2 15 14	fieldstrength range 0-15 (corresponds to 0-60dBμV on FM and AM) quality range 0-15 (weighted quality for AF consideration, 15=best quality)
Freq./fieldstrength/qual. (RDS OFF)	-03.2 15 0	when RDS is OFF the quality is not evaluated
Program service name	PS BAYERN 3	
Program identification (PI/TP/ TA/PTY)	D318 1 - 0 12	
Qual./fieldstrength/noise/mulipath/freq.	FF00 103.2	values are shown in hexadecimal format
Freq./fieldstrength (for AM) AM	AM 207 14	depending on the waveband MW or LW i.s.o.
<u>TA volume</u>	TP-V 0	(default) with < and > or preset 1 and 2 keys TA volume can be changed (-9 to +9)
<u>Display test</u>	Preset 1 Preset 2 Preset 3 Preset 4	Chessboard pattern Chessboard pattern invers all segments shining all segments dark
<u>Area</u>	AREA EUROPE	with < and > keys the set can be switched to area USA or USA+TP, refer to technical data for differences (USA+TP=USA with TP enabled)

DEFAULT SETTINGS (Delivery status)

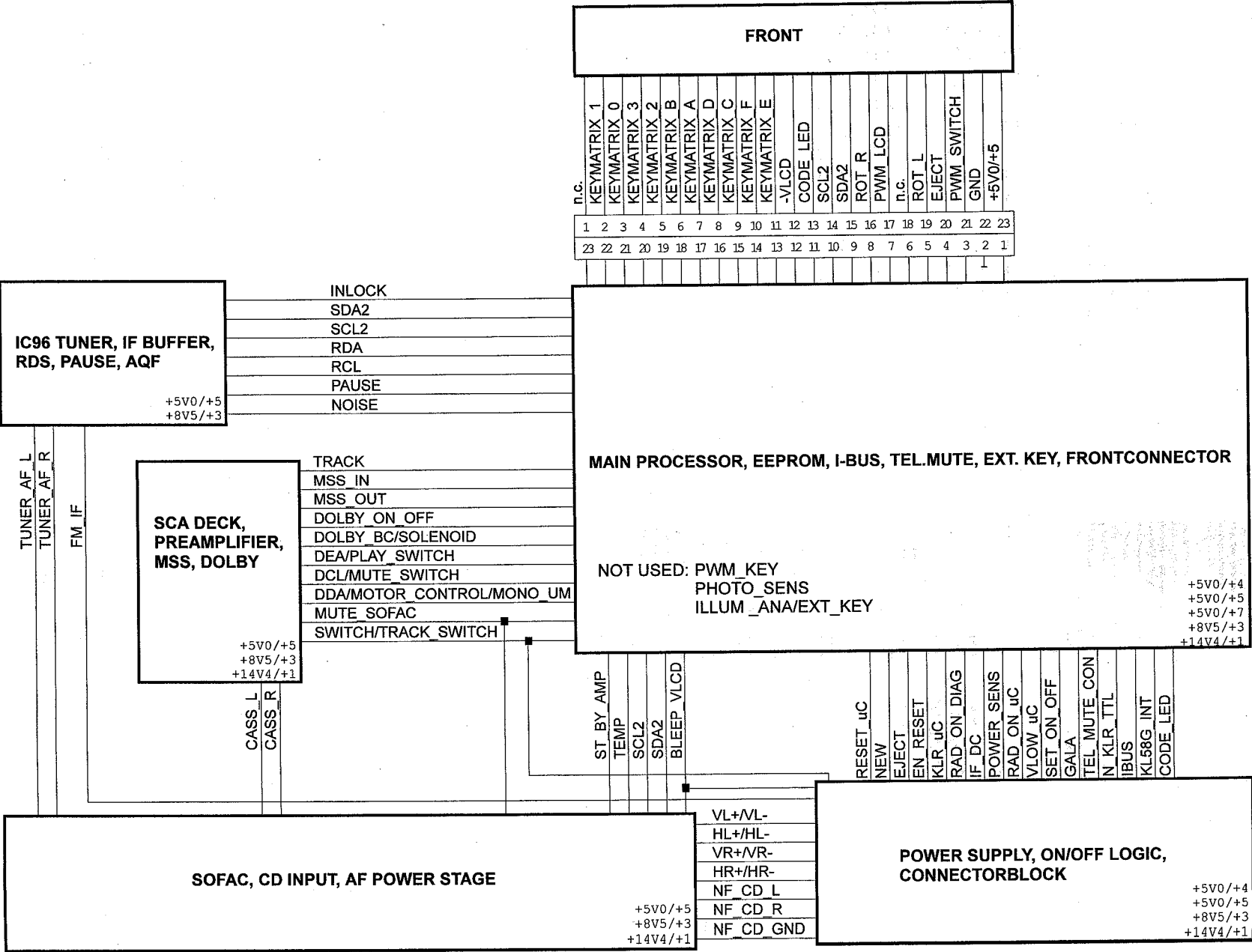
Volume:	100 mV (FM, $\Delta F = 22,5 \text{ KHz}$, $f_{\text{mod}} = 1 \text{ KHz}$)
Tone:	all tone settings in center position
Speed volume:	3
TA volume:	0
Radio mode:	FM1, preset 1 (89.3 MHz), RDS ON, REG ON, TP OFF when switching to AM: MW, preset 1 (630 KHz)
Cassette mode:	NOR direction (TAPE 1), Dolby OFF

CHECKS AND ALIGNMENTS

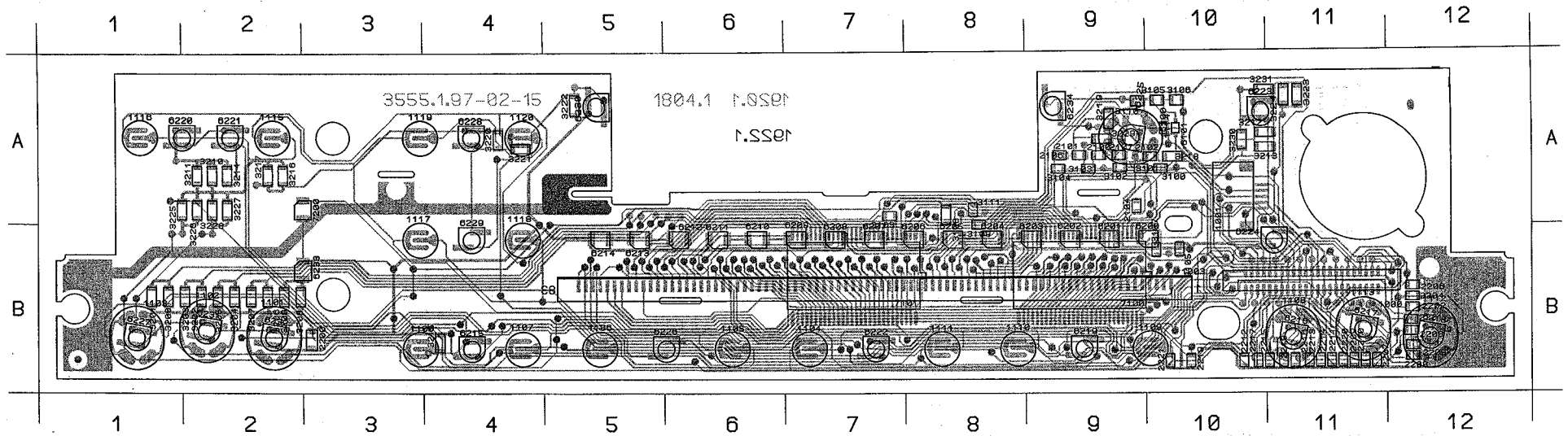
ITEM	SIGNAL	TUNE/ADJUST	POINT OF MEASURE	VALUE
<u>1</u>	<u>Check demodulated FM level</u>			
1.1	FM 98MHz, 1mV, $\Delta f=22.5\text{KHz}$, AF=1KHz	FM 98MHz	M201 (MPX)	AC 200mV +/- 50mV
1.2	FM 98MHz, 1mV, $\Delta f=3.75\text{KHz}$, AF=57KHz			AC 25mV +25mV/-10mV
<u>2</u>	<u>Check noise limited sensitivity. S/N 26dB</u>			
2.1	FM 98MHz, 4 μ V, $\Delta f=22.5\text{KHz}$, AF=1KHz	FM 98MHz	Connectorblock (Speaker)	Referencelevel (0 dB)
2.2	FM 98MHz, 4 μ V, $\Delta f=22.5\text{KHz}$, without modulation			- 26 dB
2.3	MW 999KHz, 30 μ V, 30% mod., AF=1KHz	MW 999KHz	Connectorblock (Speaker)	Referencelevel (0 dB)
2.4	MW 999KHz, 30 μ V, without modulation			- 26 dB
2.5	LW207KHz, 55 μ V, 30% mod., AF=1KHz	LW 207KHz	Connectorblock (Speaker)	Referencelevel (0 dB)
2.6	LW207KHz, 55 μ V, without modulation			- 26 dB
<u>3</u>	<u>Check noise and pause detector</u>			
3.1	FM98MHz, 1mV, $\Delta f=75\text{KHz}$, AF=40KHz	FM 98MHz	M200 (NOISE)	2.5V +/- 0.3V
3.2	FM98MHz, 1mV, $\Delta f=5\text{KHz}$, AF=1KHz	FM 98MHz	M202 (PAUSE)	0.6V +/- 0.1V
<u>4</u>	<u>Check search sensitivities</u>			
4.1	FM98MHz, 13 μ V, $\Delta f=22.5\text{KHz}$, AF=1KHz	Autosearch	Tuning stop within first run	
4.2	MW 999KHz, 40 μ V, 30% mod., AF=1KHz	Autosearch	Tuning stop within first run	
4.3	LW207KHz, 40 μ V, 30% mod., AF=1KHz	Autosearch	Tuning stop within first run	
<u>5</u>	<u>Align search sensitivities *</u>			
5.1	FM98MHz, 22dB μ V, without modulation	FM 98MHz	Store FM level into EEPROM	
5.2	MW 999KHz, 32dB μ V, without modulation	MW 999KHz	Store AM level into EEPROM	
<u>6</u>	<u>Align Dolby level</u>			
6.1	CC 200nWb/m, 400Hz (SBC419)	3737 (R) + 3742 (L)	M155 (R) + M154 (L), (CASS_R + CASS_L)	300mV

* The alignment of search sensitivities is only possible with the EEPROM TOOL KIT 4822 395 10297 and the update diskette 4822 901 10025. Follow the instructions on screen and read the information in the files 'README.TXT' and '795_23.TXT'.

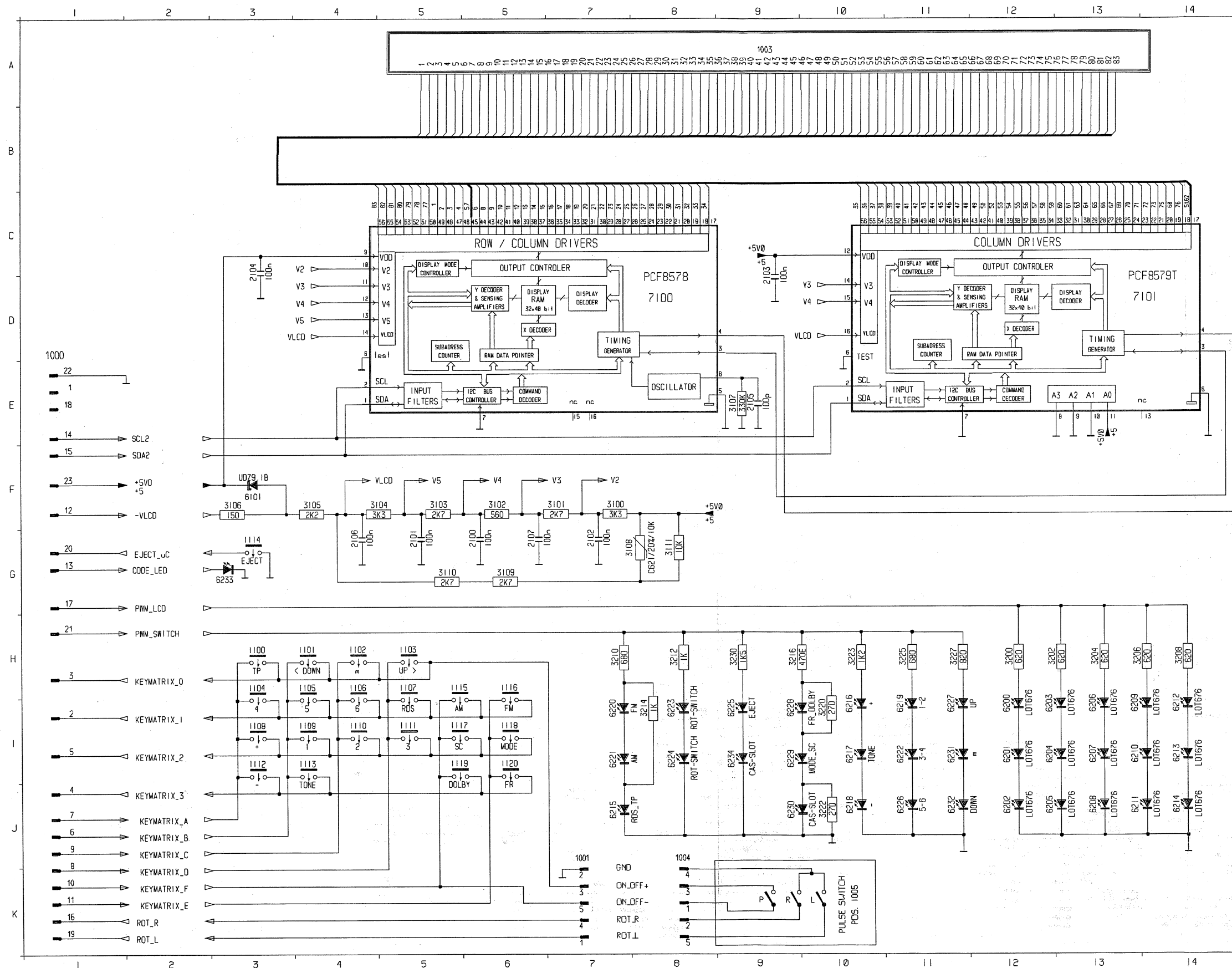
WIRING DIAGRAM



Front-PW B

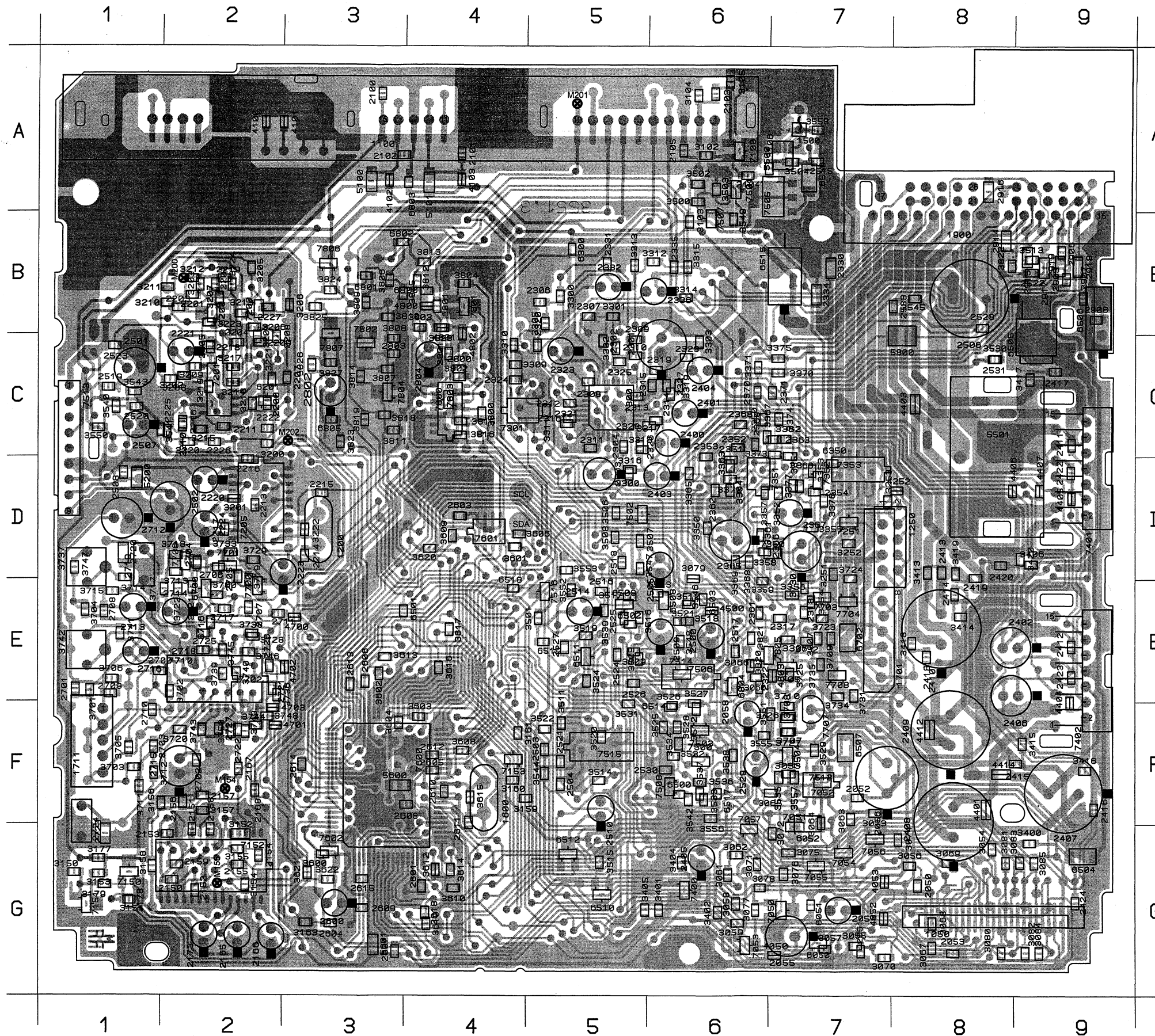


1000 B 11	1113 B 11	2200 B 3	2216 B 11	3110 A 9	3214 A 2	3230 A 10	6212 B 6	6228 A 4
1001 A 10	1114 A 9	2201 B 12	2217 B 10	3111 A 8	3215 B 4	3231 A 10	6213 B 5	6229 B 4
1003 B 7	1115 A 2	2202 B 12	2218 B 11	3200 B 1	3216 A 2	6100 A 10	6214 B 5	6230 A 5
1100 B 3	1116 A 1	2203 B 12	2219 B 10	3201 B 1	3217 A 2	6101 A 10	6215 B 4	6231 B 2
1101 B 2	1117 B 3	2204 B 12	2220 B 11	3202 B 2	3218 A 10	6200 B 10	6216 B 11	6232 B 2
1102 B 2	1118 B 4	2205 B 12	2221 B 10	3203 B 2	3219 A 9	6201 B 9	6217 B 11	6233 B 2
1103 B 1	1119 A 3	2206 B 12	3100 A 10	3204 B 2	3220 A 4	6202 B 9	6218 B 12	6234 A 9
1104 B 7	1120 A 4	2207 B 11	3101 A 9	3205 B 2	3221 A 4	6203 B 9	6219 B 9	7100 B 9
1105 B 6	2100 A 9	2208 B 12	3102 A 9	3206 B 2	3222 A 5	6204 B 8	6220 A 1	7101 B 7
1106 B 5	2101 A 9	2209 B 11	3103 A 9	3207 B 2	3223 A 11	6205 B 8	6221 A 2	7200 A 2
1107 B 4	2102 A 10	2210 B 11	3104 A 9	3208 B 2	3224 A 11	6206 B 8	6222 B 7	
1108 B 11	2103 A 7	2211 B 11	3105 A 10	3209 B 2	3225 A 1	6207 B 7	6223 A 10	
1109 B 10	2104 A 9	2212 B 10	3106 A 10	3210 A 2	3226 A 2	6208 B 7	6224 B 11	
1110 B 8	2105 B 10	2213 B 11	3107 B 10	3211 A 2	3227 A 2	6209 B 7	6225 A 9	
1111 B 8	2106 A 9	2214 B 11	3108 A 8	3212 A 10	3228 A 2	6210 B 6	6226 B 6	
1112 B 12	2107 A 9	2215 B 11	3109 A 8	3213 A 10	3229 A 9	6211 B 6	6227 B 1	



1000	D 1	6224	I 8
1001	J 7	6225	I 9
1003	A 9	6226	J 11
1004	J 8	6227	I 11
1005	K 10	6228	I 9
1100	H 3	6229	I 9
1101	H 4	6230	J 9
1102	H 4	6231	I 11
1103	H 5	6232	J 11
1104	H 3	6233	G 3
1105	H 4	6234	I 9
1106	H 4	7100	D 8
1107	H 5	7101	D 13
1108	I 3		
1109	I 4		
1110	I 4		
1111	I 5		
1112	I 3		
1113	I 4		
1114	G 3		
1115	H 5		
1116	H 6		
1117	I 5		
1118	I 6		
1119	I 5		
1120	I 6		
2100	G 6		
2101	G 5		
2102	G 7		
2103	D 9		
2104	C 3		
2105	E 9		
2106	G 4		
2107	G 6		
3100	F 7		
3101	F 7		
3102	F 6		
3103	F 5		
3104	F 5		
3105	F 4		
3106	F 3		
3107	E 9		
3108	G 8		
3109	G 6		
3110	G 5		
3111	G 8		
3200	H 12		
3202	H 12		
3204	H 13		
3206	H 13		
3208	H 14		
3210	H 7		
3212	H 8		
3214	I 8		
3216	H 9		
3220	I 10		
3222	J 10		
3223	H 10		
3225	H 11		
3227	H 11		
3230	H 9		
6101	F 3		
6200	I 12		
6201	I 12		
6202	J 12		
6203	I 12		
6204	I 12		
6205	J 12		
6206	I 13		
6207	I 13		
6208	J 13		
6209	I 13		
6210	I 13		
6211	J 13		
6212	I 14		
6213	I 14		
6214	J 14		
6215	J 7		
6216	I 10		
6217	I 10		
6218	J 10		
6219	I 11		
6220	I 7		
6221	I 7		
6222	I 11		
6223	I 8		

MAIN-PWB, A-SIDE VIEW

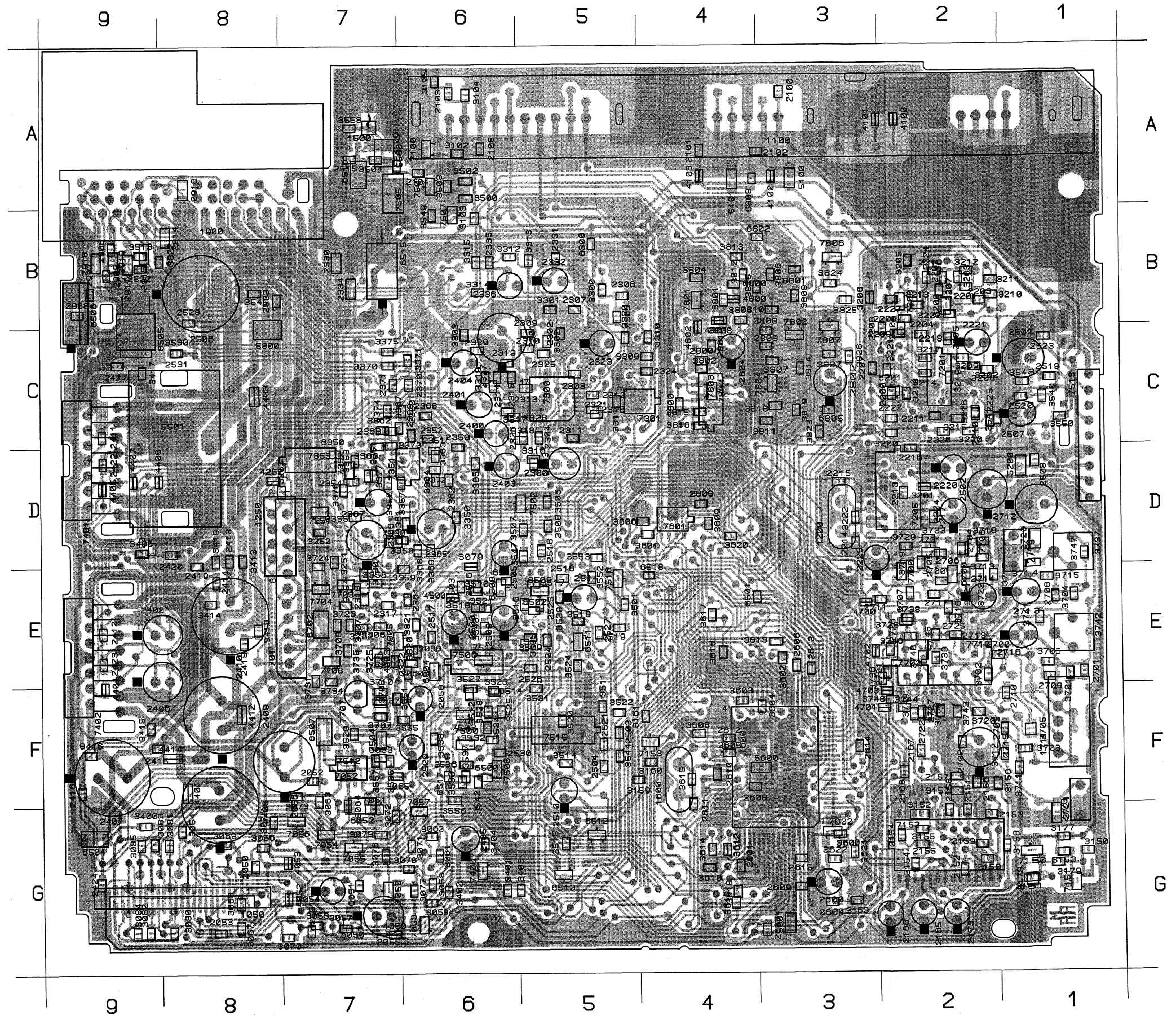


1050 G 8	2303 D 5	2420 D 8	2719 D 1	3156 F 2
1100 A 4	2304 C 5	2422 D 9	2720 D 1	3157 F 2
1200 D 3	2305 B 5	2423 E 9	2721 E 2	3158 G 1
1250 D 7	2306 B 5	2424 G 9	2722 F 2	3159 F 5
1500 A 7	2307 B 5	2500 E 6	2723 F 1	3160 F 4
1600 F 4	2308 C 5	2501 C 1	2724 G 1	3161 F 4
1701 E 7	2309 C 5	2502 D 2	2725 E 2	3163 G 3
1711 F 1	2310 C 5	2503 F 5	2726 E 2	3177 G 1
1900 A 8	2311 C 5	2504 F 5	2727 F 2	3178 G 1
2050 G 8	2312 C 5	2505 D 6	2800 C 4	3179 G 1
2051 G 7	2313 C 5	2506 B 8	2801 C 4	3200 C 2
2052 F 7	2314 C 6	2507 C 1	2802 C 3	3201 D 2
2053 G 8	2315 C 6	2508 D 1	2803 C 3	3202 C 2
2054 G 7	2316 C 5	2509 E 6	2804 C 4	3203 B 2
2055 G 7	2317 E 7	2510 F 5	2905 B 9	3204 C 2
2056 F 7	2318 E 7	2514 E 5	2906 B 9	3205 B 2
2058 F 6	2319 C 6	2515 A 7	2907 B 9	3206 B 3
2100 A 3	2320 C 5	2516 E 5	2908 B 9	3207 B 2
2101 A 4	2321 C 5	2517 E 6	2914 B 8	3208 C 2
2102 A 3	2322 E 6	2518 D 5	2915 B 9	3209 C 2
2103 A 6	2323 C 5	2519 C 1	2916 A 8	3210 B 2
2104 A 6	2324 C 4	2520 C 1	2917 B 9	3211 B 2
2105 A 6	2325 C 5	2521 F 5	2918 B 9	3212 B 2
2150 G 2	2326 C 5	2522 B 9	2919 B 9	3213 B 2
2151 G 2	2327 C 6	2523 C 1	3053 F 7	3214 C 2
2152 G 2	2328 C 6	2524 E 5	3054 G 8	3215 C 2
2153 G 2	2329 C 6	2525 E 5	3055 G 7	3216 C 2
2154 G 2	2330 B 7	2526 E 5	3056 G 8	3217 C 2
2155 G 2	2331 B 5	2527 E 5	3057 G 7	3218 C 2
2156 F 2	2332 B 5	2528 B 8	3058 G 6	3219 C 2
2157 F 2	2334 B 7	2529 F 6	3059 G 6	3220 C 2
2158 G 2	2335 B 6	2530 F 6	3060 E 6	3221 C 2
2159 G 2	2336 B 6	2531 C 8	3061 G 6	3222 D 3
2165 G 2	2350 C 6	2533 B 8	3062 G 6	3223 B 2
2166 G 2	2351 D 6	2600 G 3	3063 F 7	3224 B 2
2167 F 2	2352 C 6	2601 G 4	3064 F 7	3251 D 7
2168 F 2	2353 C 6	2603 D 4	3065 F 7	3252 D 7
2173 G 2	2354 D 7	2604 G 3	3066 E 6	3253 D 7
2200 C 2	2361 E 6	2605 F 4	3067 G 8	3300 B 5
2201 B 2	2362 D 6	2606 E 3	3068 G 8	3301 B 5
2202 B 2	2363 C 7	2607 G 3	3069 G 8	3302 C 5
2203 B 2	2365 D 6	2608 F 4	3070 G 7	3303 C 6
2204 C 2	2366 D 7	2609 G 3	3071 G 6	3306 E 7
2205 C 2	2367 D 7	2610 F 4	3072 G 7	3307 E 7
2206 B 2	2368 C 6	2611 F 4	3073 F 7	3309 C 4
2207 C 3	2369 C 6	2612 F 4	3074 G 8	3310 C 4
2208 C 2	2370 C 6	2613 E 3	3075 G 7	3311 C 5
2209 C 2	2371 C 7	2614 F 3	3076 G 7	3312 B 6
2210 C 2	2400 C 6	2615 G 3	3077 G 6	3313 B 5
2211 C 2	2401 C 6	2700 E 1	3078 G 6	3314 B 6
2213 D 2	2402 E 8	2701 E 1	3079 D 6	3315 B 6
2214 D 3	2403 D 6	2702 F 2	3080 G 8	3316 D 5
2215 D 3	2404 C 6	2703 F 1	3081 G 8	3317 C 6
2216 D 2	2405 G 6	2704 D 2	3082 G 9	3318 C 5
2217 D 2	2406 E 8	2705 D 2	3083 G 9	3319 C 6
2218 C 2	2407 F 9	2706 D 2	3084 G 9	3350 D 6
2219 B 2	2408 F 8	2707 E 2	3085 G 9	3351 D 7
2220 D 2	2409 F 8	2708 E 1	3102 A 6	3352 D 7
2221 C 2	2410 E 8	2709 E 1	3103 B 6	3353 D 7
2222 C 2	2411 C 9	2710 F 1	3104 A 6	3354 E 7
2223 D 3	2412 E 9	2711 E 2	3105 A 6	3355 D 7
2224 D 2	2413 D 8	2712 D 1	3106 A 6	3356 E 7
2225 C 2	2414 E 8	2713 E 1	3150 G 1	3357 D 6
2226 C 2	2415 F 9	2714 E 2	3151 G 1	3358 D 6
2227 B 2	2416 F 9	2715 F 2	3152 G 2	3359 E 6
2300 D 5	2417 C 9	2716 E 1	3153 G 1	3361 D 6
2301 C 6	2418 E 8	2717 E 2	3154 G 2	3362 C 7
2302 C 5	2419 D 8	2718 E 2	3155 G 2	3363 D 6

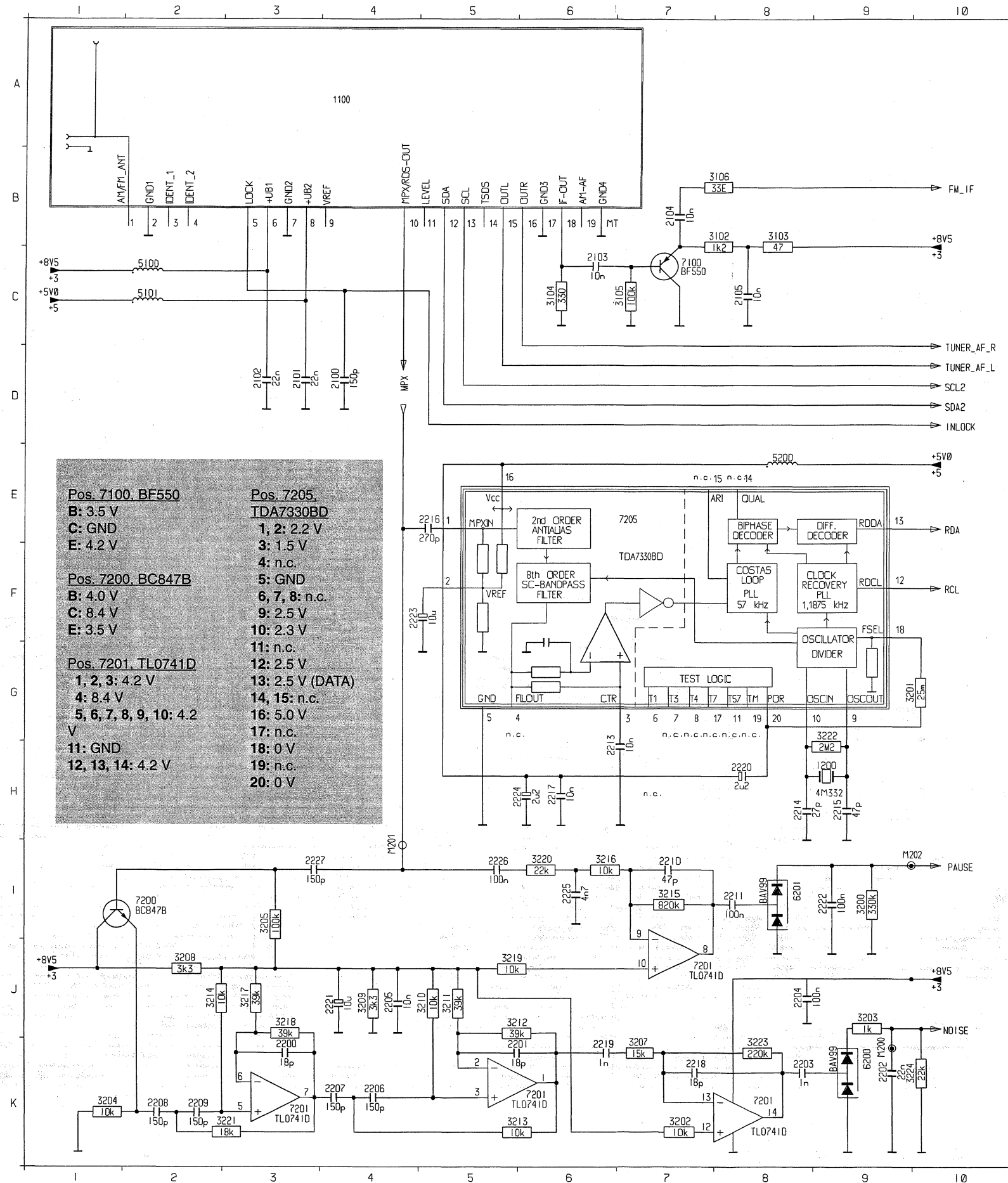
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MAIN-PWB, B-SIDE VIEW

3364 D 6	3541 C 1	3731 E 7	4703 F 2	7351 D 6
3365 D 6	3542 F 6	3732 E 7	4800 B 4	7352 D 7
3366 C 7	3543 C 1	3733 D 2	4801 B 4	7353 D 7
3367 C 6	3544 F 5	3734 E 7	4802 B 4	7400 G 6
3368 D 6	3545 B 8	3735 E 7	4803 E 7	7401 D 9
3369 D 6	3546 E 6	3736 E 2	5100 A 3	7402 E 9
3370 C 7	3547 D 5	3737 D 1	5101 A 4	7500 F 6
3371 C 6	3548 E 6	3738 E 2	5200 D 1	7501 A 6
3372 D 6	3549 B 6	3739 E 2	5500 A 7	7502 D 5
3373 C 7	3550 C 1	3740 E 2	5501 C 8	7503 F 6
3374 C 7	3551 F 7	3741 E 1	5600 F 3	7504 F 7
3375 C 7	3552 E 5	3742 E 1	5601 G 3	7505 A 7
3376 D 7	3553 D 5	3743 F 2	5800 C 8	7506 E 6
3377 D 7	3555 F 6	3744 F 2	6050 G 7	7507 B 6
3400 G 9	3556 F 6	3745 E 2	6051 G 7	7508 F 6
3401 G 6	3557 F 7	3746 E 2	6052 F 7	7512 F 7
3402 G 6	3558 A 7	3747 D 1	6200 B 2	7513 C 1
3404 G 6	3600 G 3	3748 F 2	6201 C 2	7514 E 6
3405 G 5	3601 D 4	3749 F 2	6300 B 5	7515 F 5
3406 D 9	3602 E 3	3750 F 2	6350 D 7	7516 E 5
3413 D 8	3603 F 4	3800 C 4	6500 F 6	7600 F 3
3414 E 8	3604 F 3	3801 B 4	6501 E 3	7601 D 4
3415 F 9	3606 D 4	3802 C 4	6502 E 5	7602 G 3
3416 F 9	3608 F 4	3803 B 4	6503 E 6	7700 E 2
3417 C 9	3609 D 4	3804 B 4	6504 G 9	7701 D 2
3418 E 8	3610 G 4	3805 B 3	6505 C 9	7702 E 2
3419 D 8	3612 G 4	3806 B 3	6506 B 9	7703 E 7
3420 D 9	3613 E 3	3807 C 3	6507 F 7	7704 E 7
3500 A 6	3614 G 4	3808 C 3	6508 E 6	7705 E 7
3501 E 5	3615 F 4	3809 B 3	6509 E 5	7706 D 2
3502 A 6	3616 E 4	3810 B 3	6510 G 5	7707 F 7
3503 A 6	3617 E 4	3811 C 3	6511 E 5	7708 E 7
3504 A 7	3618 G 4	3812 B 4	6512 G 5	7710 E 2
3505 E 5	3619 G 4	3813 B 4	6513 E 6	7800 C 4
3506 D 5	3620 D 4	3814 C 3	6514 F 6	7801 B 4
3507 D 5	3621 G 3	3815 C 4	6515 B 7	7802 C 3
3508 D 5	3622 G 3	3816 C 4	6516 A 7	7803 C 4
3509 E 5	3700 E 2	3818 C 3	6517 F 6	7804 C 3
3510 E 6	3701 E 1	3819 C 3	6518 E 4	7805 E 7
3511 F 5	3702 E 2	3820 E 6	6519 E 5	7806 B 3
3512 F 6	3703 F 1	3821 E 6	6700 E 2	7807 B 3
3513 B 9	3704 E 1	3822 B 8	6702 E 7	J300 C 5
3514 F 5	3705 F 1	3823 C 3	6800 B 4	S500 A 6
3515 G 5	3706 E 1	3824 B 3	6801 B 3	S501 A 7
3516 E 5	3707 F 7	3825 B 3	6802 B 3	S800 B 9
3517 E 5	3708 F 7	3826 C 3	6803 A 4	S801 C 6
3518 E 6	3709 E 7	3827 C 3	6804 E 6	M154 F 2
3519 E 5	3710 F 7	3828 B 4	6805 C 3	M155 G 2
3520 F 5	3711 F 1	4050 G 7	7050 G 7	M200 B 2
3521 E 6	3712 F 1	4052 G 7	7051 G 7	M201 A 5
3522 F 5	3713 D 2	4053 G 7	7052 F 7	M202 C 3
3524 E 5	3714 D 1	4100 A 2	7053 G 6	
3525 F 6	3715 E 1	4101 A 2	7054 G 7	
3526 F 6	3716 E 2	4102 A 3	7055 G 7	
3527 F 6	3717 E 2	4103 A 4	7056 G 7	
3528 F 6	3718 D 2	4252 D 8	7057 G 6	
3529 F 7	3719 E 2	4401 F 8	7100 A 6	
3530 C 8	3720 F 2	4403 C 8	7150 G 1	
3531 F 5	3721 E 2	4404 E 9	7151 G 1	
3532 F 6	3722 E 2	4405 D 9	7152 G 2	
3533 F 6	3723 E 7	4406 D 8	7153 F 4	
3534 F 6	3724 D 7	4407 D 9	7200 B 2	
3535 F 7	3725 E 7	4412 F 8	7201 C 2	
3536 F 6	3726 F 7	4414 F 8	7205 D 2	
3537 F 6	3727 F 7	4500 E 6	7251 D 7	
3538 F 6	3728 E 2	4700 E 3	7300 C 5	
3539 E 5	3729 D 2	4701 F 2	7301 C 4	
3540 C 1	3730 E 7	4702 E 3	7350 D 7	



IC 96 - TUNER, IF-BUFFER, RDS, PAUSE, AQF



Pos. 7100, BF550
B: 3.5 V
C: GND
E: 4.2 V

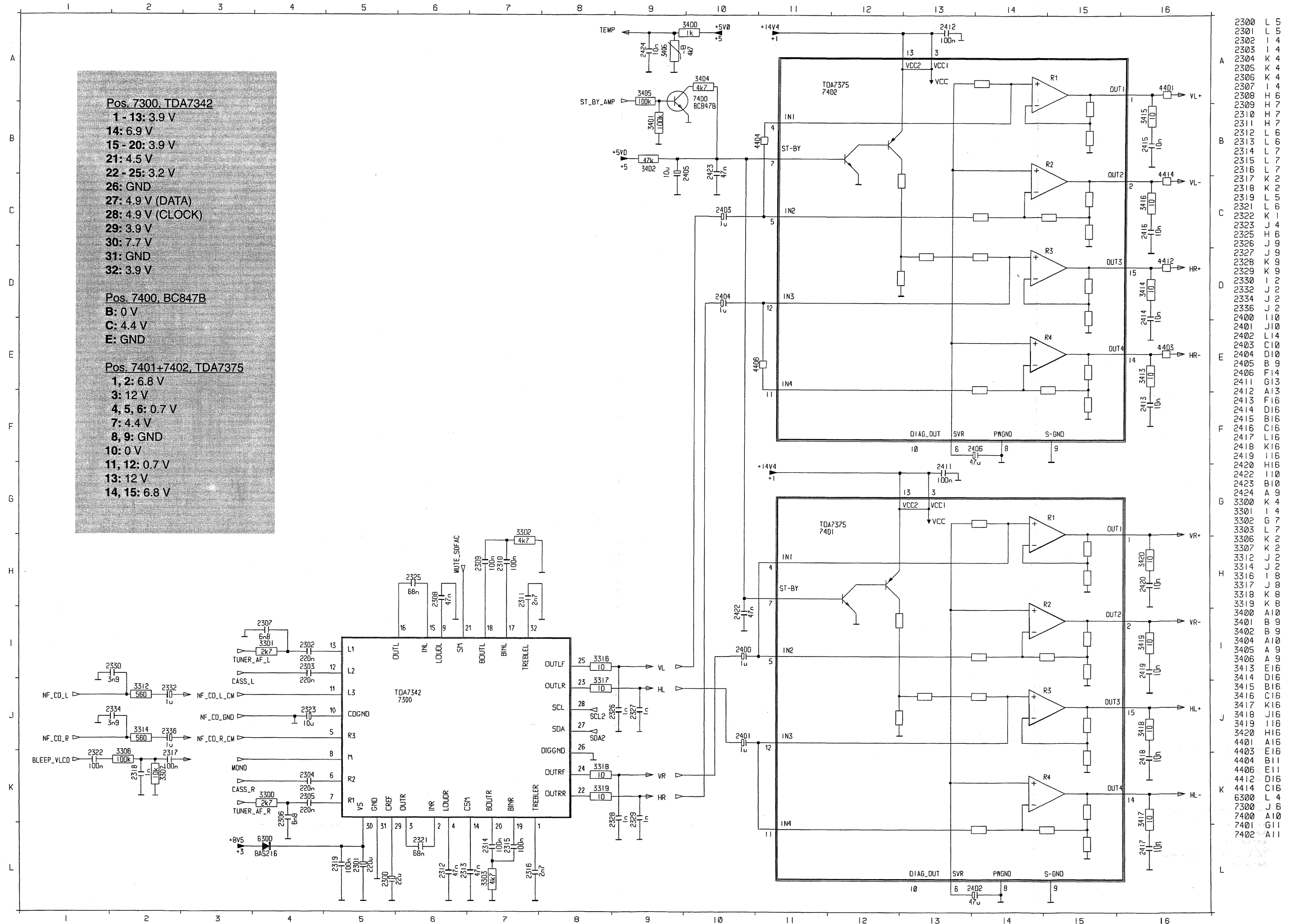
Pos. 7200, BC847B
B: 4.0 V
C: 8.4 V
E: 3.5 V

Pos. 7201, TL0741D
1, 2, 3: 4.2 V
4: 8.4 V
5, 6, 7, 8, 9, 10: 4.2 V
11: GND
12, 13, 14: 4.2 V

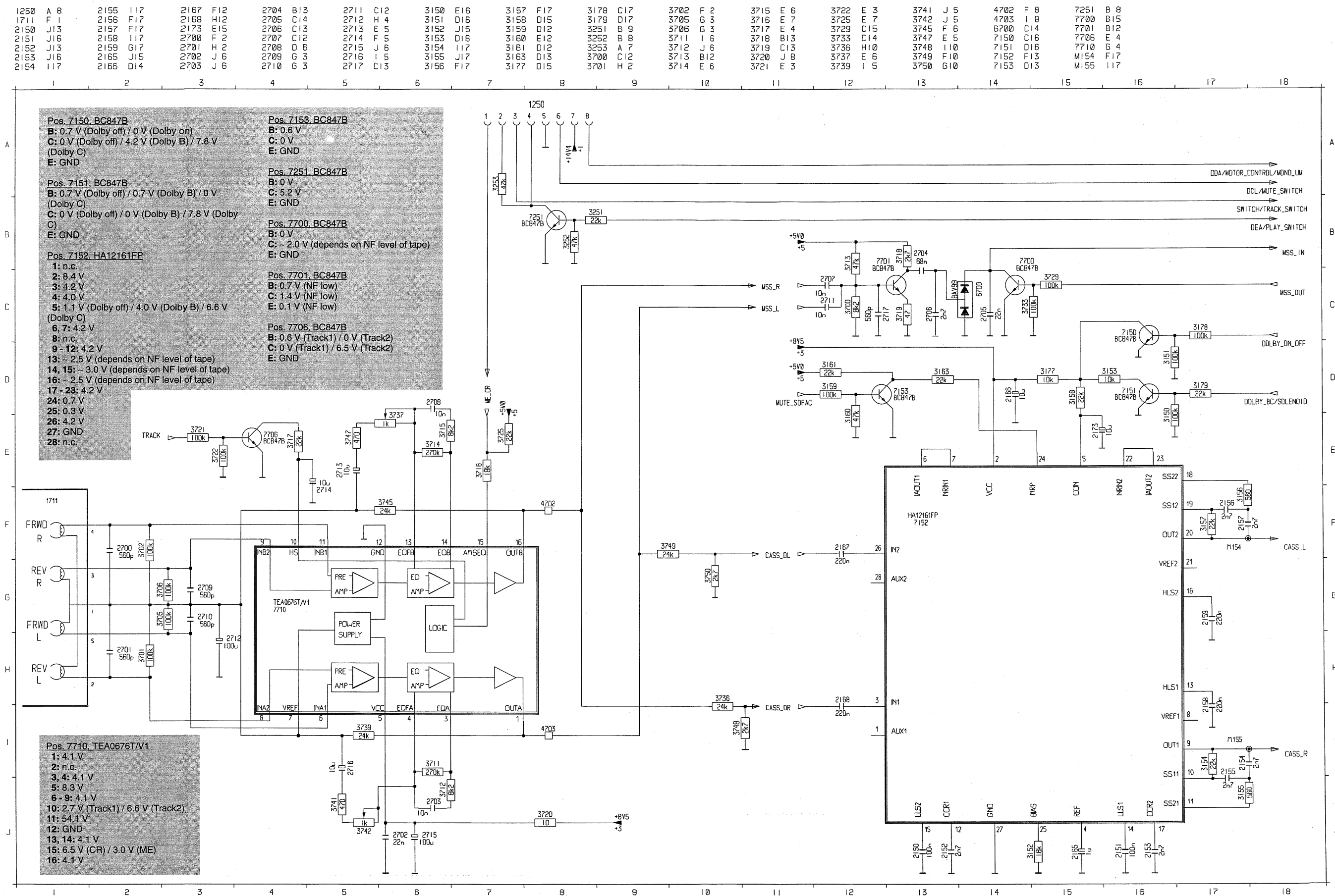
Pos. 7205, TDA7330BD
1, 2: 2.2 V
3: 1.5 V
4: n.c.
5: GND
6, 7, 8: n.c.
9: 2.5 V
10: 2.3 V
11: n.c.
12: 2.5 V
13: 2.5 V (DATA)
14, 15: n.c.
16: 5.0 V
17: n.c.
18: 0 V
19: n.c.
20: 0 V

1100 A 4
1200 H 9
2100 D 4
2101 D 3
2102 D 3
2103 C 6
2104 B 7
2105 C 8
2200 K 3
2201 K 6
2202 K 9
2203 K 8
2204 J 8
2205 J 4
2206 K 4
2207 K 4
2208 K 2
2209 K 2
2210 I 7
2211 I 8
2213 H 6
2214 H 8
2215 H 9
2216 E 5
2217 H 6
2218 K 7
2219 K 6
2220 H 8
2221 J 4
2222 I 9
2223 F 4
2224 H 6
2225 I 6
2226 I 5
2227 I 3
3102 B 8
3103 B 8
3104 C 6
3105 C 7
3106 B 8
3200 I 9
3201 G 10
3202 K 7
3203 J 9
3204 K 1
3205 I 3
3207 K 7
3208 J 2
3209 J 4
3210 J 5
3211 J 5
3212 J 6
3213 K 6
3214 J 2
3215 I 7
3216 I 6
3217 J 3
3218 J 3
3219 J 5
3220 I 6
3221 K 3
3222 G 9
3223 K 8
3224 K 10
5100 C 2
5101 C 2
5200 E 8
6200 K 9
6201 I 8
7100 C 7
7200 I 2
7201 K 6
7201 K 3
7201 J 7
7201 K 8
7205 E 7
J M200 K 9
M201 I 4
M202 I 9

SOFAC, CD-INPUT, AF POWER STAGE

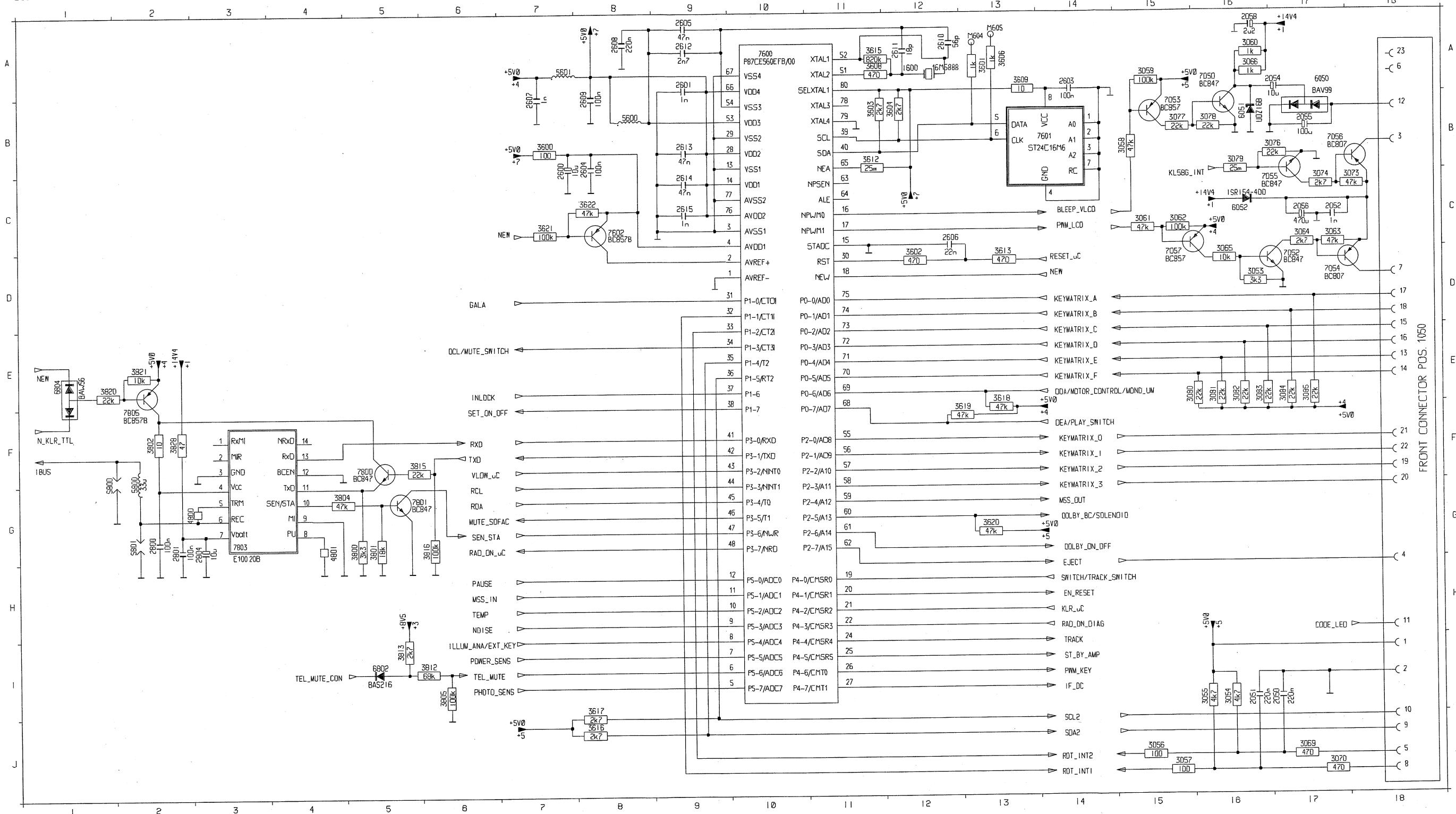


SCA-DECK, PREAMPLIFIER, MSS, DOLBY

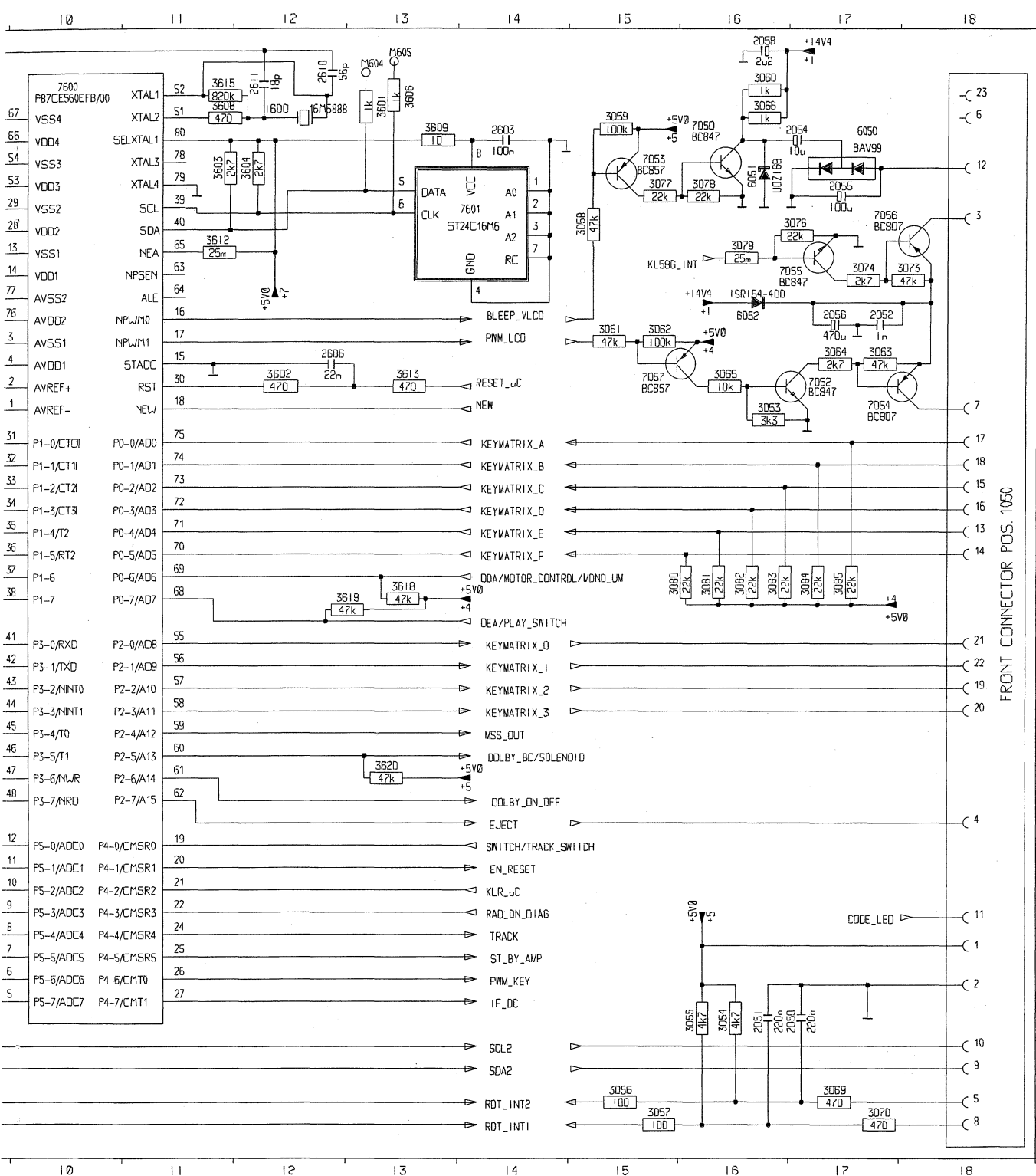


MAIN PROCESSOR, EEPROM, I-BUS, TEL. MUTE, EXT.KEY, FRONT CONNECTOR

1050 E18	2056 C17	2606 C12	2613 B 9	3054 I16	3061 C15	3070 J17	3080 E15	3601 A13	3612 B11	3620 G13	3805 I 6	3828 F 2	6051 B16	7054 D17	7800 F 5	SB01 G 2
1600 A12	2058 A16	2607 B 7	2614 C 9	3055 I16	3062 C15	3073 C18	3081 E16	3602 D12	3613 D13	3621 C 7	3812 I 6	4800 G 3	6052 C16	7055 C16	7801 G 5	
2050 I17	2600 B 7	2608 A 8	2615 C 9	3056 J15	3063 C17	3074 C17	3082 E16	3603 B11	3615 A11	3622 C 8	3813 I 5	4801 G 4	6802 I 5	7056 B17	7803 G 3	
2051 I16	2601 A 9	2609 B 8	2600 G 2	3057 J15	3064 C17	3076 B17	3083 E16	3604 B12	3616 J 8	3800 G 5	3815 F 5	5600 B 8	6804 E 1	7057 D15	7805 F 2	
2052 C17	2603 A14	2610 A12	2601 G 2	3058 B15	3065 D16	3077 B15	3084 E17	3606 A13	3617 I 8	3801 G 5	3816 G 6	5601 A 7	7050 A16	7800 A10	M604 A13	
2054 A17	2604 B 8	2611 A12	2604 G 3	3059 A15	3066 A16	3078 B16	3085 E17	3608 A11	3618 E13	3802 F 2	3820 E 1	5800 F 2	7052 D17	7601 B14	M605 A13	
2055 B17	2605 A 9	2612 A 9	3053 D16	3060 A16	3069 J17	3079 B16	3600 B 7	3609 A13	3619 F13	3804 G 4	3821 E 2	6050 A17	7053 B15	7602 C 8	SB00 F 1	



13	3612	B11	3620	G13	3805	I 6	3828	F 2	6051	B16	7054	D17	7800	F 5	S901	G 2
12	3613	D13	3621	C 7	3812	I 6	4800	G 3	6052	C16	7055	C16	7801	G 5		
11	3615	A11	3622	C 8	3813	I 5	4801	G 4	6802	I 5	7056	B17	7803	G 3		
12	3616	J 8	3800	G 5	3815	F 5	5600	B 8	6804	A 1	7057	D15	7805	F 2		
13	3617	I 8	3801	G 5	3816	G 6	5601	A 7	7050	A16	7600	A10	M604	A13		
12	3618	E13	3802	F 2	3820	E 1	5800	F 2	7052	D17	7601	B14	M605	A13		
11	3619	F13	3804	G 4	3821	E 2	6050	A17	7053	B15	7602	C 8	M606	F 1		



B: 0.4 V
C: 4.8 V
E: GND

B: 0.2 V
C: 9.5 V
E: GND

B: 4.6 V
C: 2.5 V
E: 4.9 V

B: 12 V
C: 5.8 V
E: 12 V

B: 0.6 V
C: 0 V
E: GND

B: 0.7 V
C: 0.7 V
E: 12 V

B: 4.7 V
C: 1.2 V
E: 4.9 V

1: GND
2: 4.9 V
3: GND

6: 5.0 V
7: 1.5 V
8: varvin

10: 3.7 V
11: ~ 1.0
12: ~ 5.0
13: GND

15: GND
16: 2.5 V
17: 3.8 V
18: 0 V //

20: 5.0 V
21: 4.9 V
22: 4.9 V
23: 5.0 V

25: 0 V /
26: 4.9 V
27: 0 V
28: 5.0 V

30: 0 V
31: 4.9 V
32: 4.9 V
33: 1.2 V

35: 5,0 V
36: 5,0 V
37: 4.9 V

39: 5,0 V (SCL)
40: 5,0 V (SDA)
41: 0 V

44: 2.5 V
45: 2.5 V
46: 4.5 V

49, 50: n.c.
51: 2.6 V
52: 2.2 V

58: ~ 0.2 V

62: 4.9 V
63, 64: n.c.
65, 66: 4.9

69–75: 4.9 V
76: 5.0 V
77: GND

80: 5.0 V

6: 5,0 V
7: GND
8: 5,0 V

B: 4.3 V
C: 4.9 V
E: 4.9 V

B: 4.4 V
C: 4.9 V
E: 3.9 V

B: 0 V
C: 5.0 V
E: 0 V

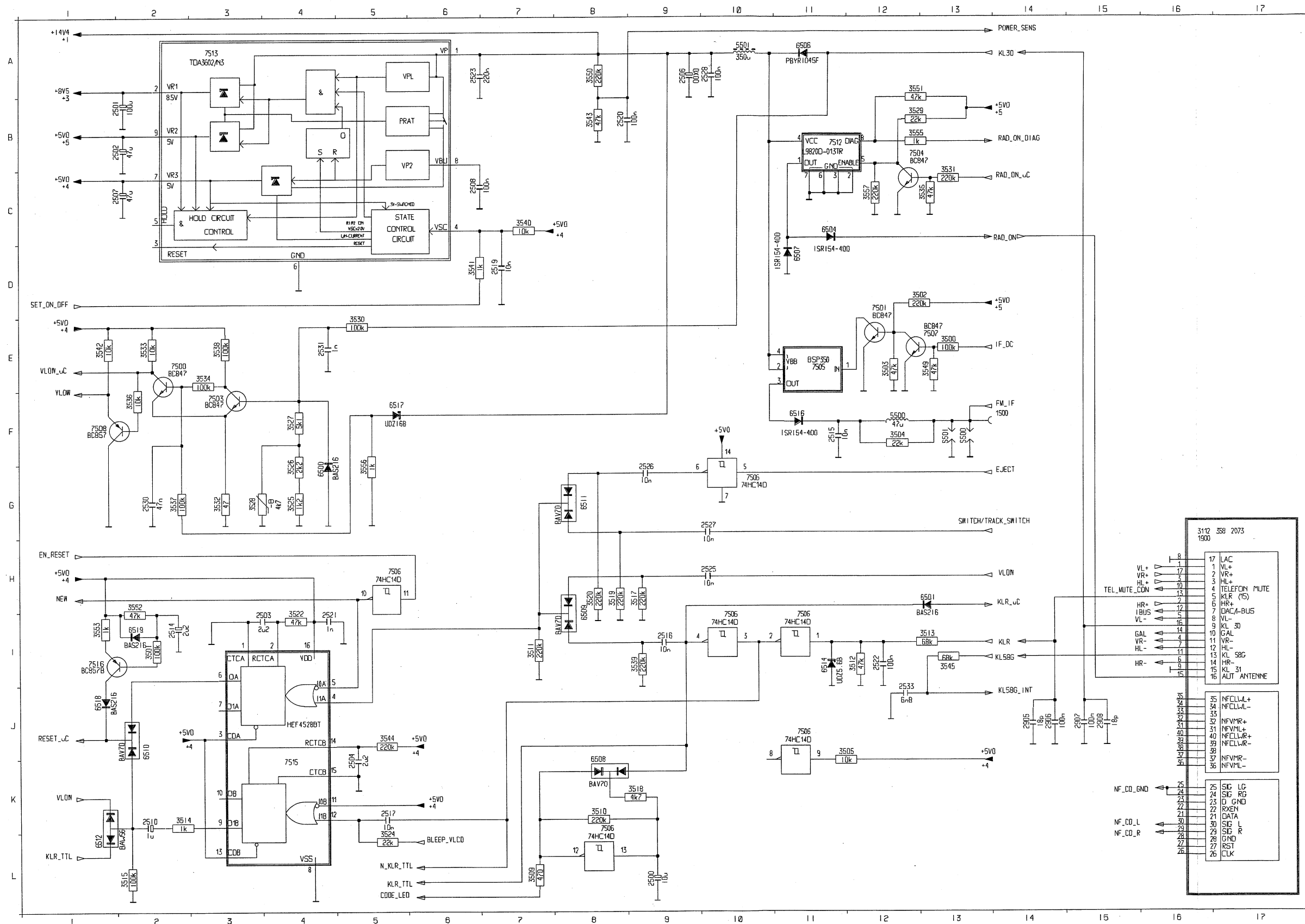
Pos. 7803
1, 2: n.c.
3: GND
4: 5.0V

7: 12 V
8, 9: GND
10: 4.7 V
11: 2.2 V

13: 0 V
14: n.c.

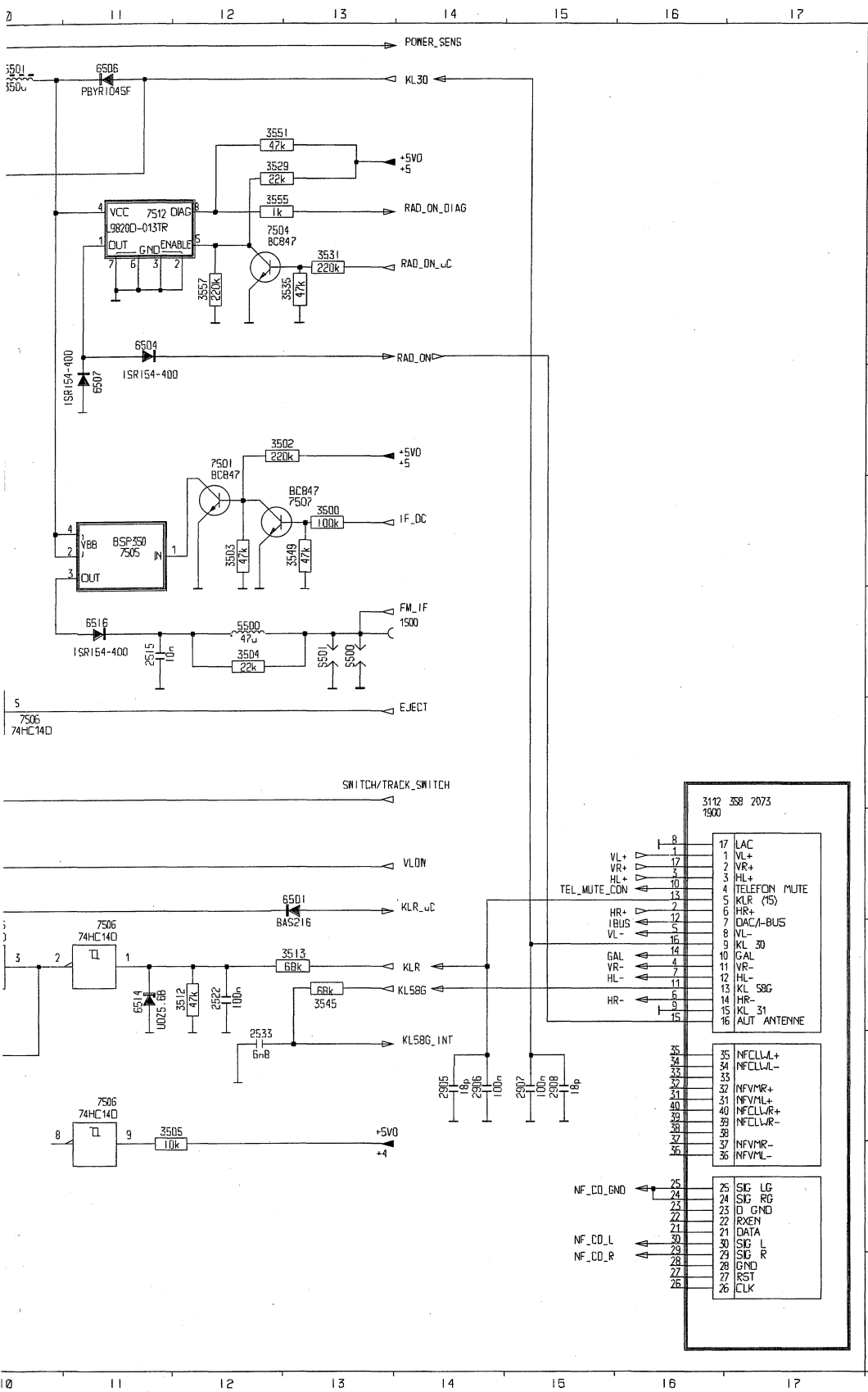
C: 4.9 V / 0 V (IGN. OFF)
E: 5.0 V

POWER SUPPLY, ON-OFF LOGIC, CONNECTORBLOCK



A	1500	F14	6518	J 1
	1900	H16	6519	I 2
	2500	L 9	7500	E 2
	2501	B 2	7501	D12
	2502	B 2	7503	F 3
	2503	I 4	7504	B13
	2504	K 5	7505	E11
	2505	A 9	7506	I11
	2507	C 2	7506	I10
	2508	C 6	7506	G10
B	2510	K 2	7506	J11
	2514	I 2	7506	H 5
	2515	F11	7506	K 8
	2516	I 9	7507	E13
	2517	K 5	7508	F 1
	2519	D 7	7512	B11
	2520	B 8	7513	A 3
	2521	I 4	7515	K 4
	2522	I12	7516	I 1
	2523	A 6	5500	F13
C	2525	H10	5501	F13
	2526	G 9		
	2527	G10		
	2528	A10		
	2530	G 2		
	2531	E 4		
	2533	J12		
	2905	J14		
	2906	J14		
	2907	J15		
D	2908	J15		
	3500	E13		
	3501	I 2		
	3502	D13		
	3503	E12		
	3504	F12		
	3505	J12		
	3509	L 7		
	3510	K 8		
	3511	I 7		
F	3512	I12		
	3513	I13		
	3514	K 2		
	3515	L 2		
	3517	H 9		
	3518	K 9		
	3519	H 8		
	3520	H 8		
	3522	I 4		
	3524	L 5		
G	3525	G 4		
	3526	G 4		
	3527	F 4		
	3528	G 3		
	3529	B12		
	3530	E 5		
	3531	C13		
	3532	G 3		
	3533	E 2		
	3534	E 3		
H	3535	C13		
	3536	F 2		
	3537	G 2		
	3538	E 3		
	3539	I 9		
	3540	C 7		
	3541	D 6		
	3542	E 1		
	3543	B 8		
	3544	J 5		
I	3545	I13		
	3549	E13		
	3550	A 8		
	3551	A12		
	3552	H 2		
	3553	I 1		
	3555	B12		
	3556	G 5		
	3557	C12		
	5500	F12		
K	5501	A10		
	6500	G 4		
	6501	H13		
	6504	C11		
	6506	A11		
	6507	D11		
	6508	K 8		
	6509	H 8		
	6510	J 2		
	6511	G 8		
L	6512	L 1		
	6514	I11		
	6516	F11		
	6517	F 5		

POWER SUPPLY, ON-OFF LOGIC, CONNECTORBLOCK



1500	F14	6518	J 1
1900	H16	6519	I 2
2500	L 9	7500	E 2
2501	B 2	7501	D12
2502	B 2	7503	F 3
2503	I 4	7504	B13
2504	K 5	7505	E11
2506	A 9	7506	I11
2507	C 2	7506	I10
2508	C 6	7506	G10
2510	K 2	7506	J11
2514	I 2	7506	H 5
2515	F11	7506	K 8
2516	I 9	7507	E13
2517	K 5	7508	F 1
2519	D 7	7512	B11
2520	B 8	7513	A 3
2521	I 4	7515	K 4
2522	I12	7516	I 1
2523	A 6	5500	F13
2525	H10	5501	F13
2526	G 9		
2527	G10		
2528	A10		
2530	G 2		
2531	E 4		
2533	J12		
2505	J14		
2506	J14		
2507	J15		
2508	J15		
3500	E13		
3501	I 2		
3502	D13		
3503	E12		
3504	F12		
3505	J12		
3509	L 7		
3510	K 8		
3511	I 7		
3512	I12		
3513	I13		
3514	K 2		
3515	L 2		
3517	H 9		
3518	K 9		
3519	H 8		
3520	H 8		
3522	I 4		
3524	L 5		
3525	G 4		
3526	G 4		
3527	F 4		
3528	G 3		
3529	B12		
3530	E 5		
3531	C13		
3532	G 3		
3533	E 2		
3534	E 3		
3535	C13		
3536	F 2		
3537	G 2		
3538	E 3		
3539	I 9		
3540	C 7		
3541	D 6		
3542	E 1		
3543	B 8		
3544	J 5		
3545	I13		
3549	E13		
3550	A 8		
3551	A12		
3552	H 2		
3553	I 1		
3555	B12		
3556	G 5		
3557	C12		
5500	F12		
5501	A10		
6500	G 4		
6501	H13		
6504	C11		
6506	A11		
6507	D11		
6508	K 8		
6509	H 8		
6510	J 2		
6511	G 8		
6512	L 1		
6514	I11		
6516	F11		
6517	F 5		

Pos. 7500, BC847

B: 0 V
C: 5.0 V
E: 0 V

Pos. 7501, BC847

B: 0.6 V / 0 V (IGN. OFF)
C: 0 V / 12 V (IGN. OFF)
E: GND

Pos. 7503, BC847

B: 0.6 V
C: 0 V
E: 0 V

Pos. 7504, BC847

B: 0 V / 0.6 V (Set OFF)
C: 4.5 V / 0 V (Set OFF)
E: GND

Pos. 7505, BSP350

1: 0 V / 12 V (IGN. OFF)
2: 12 V
3: 12 V / 8.4 V (IGN. OFF)
4: 12 V

Pos. 7506, 74HC14D

1: 5.0 V
2, 3: 0 V / 5.0 V (IGN. OFF)
4: 5.0 V / 0 V (IGN. OFF)
5: 5.0 V / 0 V (Eject button pressed)
6: 0 V / 5.0 V (Eject button pressed)
7: GND
8: n.c.
9: 5.0 V
10: 0 V
11: 5.0 V / 0 V (IGN. OFF)
12: 0 V / HIGH (Code Led ON)
13: 4.5 V / varies when Code Led activ
14: 5.0 V

Pos. 7507, BC847

B: 0 V
C: 0.6 V / 0 V (IGN. OFF)
E: GND

Pos. 7508, BC857

B: 5.0 V / 0.1 V (low or high voltage OFF)
C: GND
E: 5.0 V / 0.7 V (low or high voltage OFF)

Pos. 7512, L9820D

1: 12 V
2, 3: GND
4: 12 V
5: 4.5 V / 0 V (Set OFF)
6, 7: GND
8: 5.0 V

Pos. 7513, TDA3602

1: 12 V
2: 8.4 V
3: n.c.
4: 0.5 V / 5.0 V (IGN. OFF)
5: n.c.
6: GND
7: 5.0 V
8: 12 V
9: 4.9 V

Pos. 7515, HEF4528BT

1: GND
2, 3: 5.0 V
4, 5, 6: 0 V
7: n.c.
8: GND
9: 0 V
10: n.c.
11: 5.0 V
12: 2.5 V
13: 5.0 V
14: 2.0 V
15: GND
16: 5.0 V

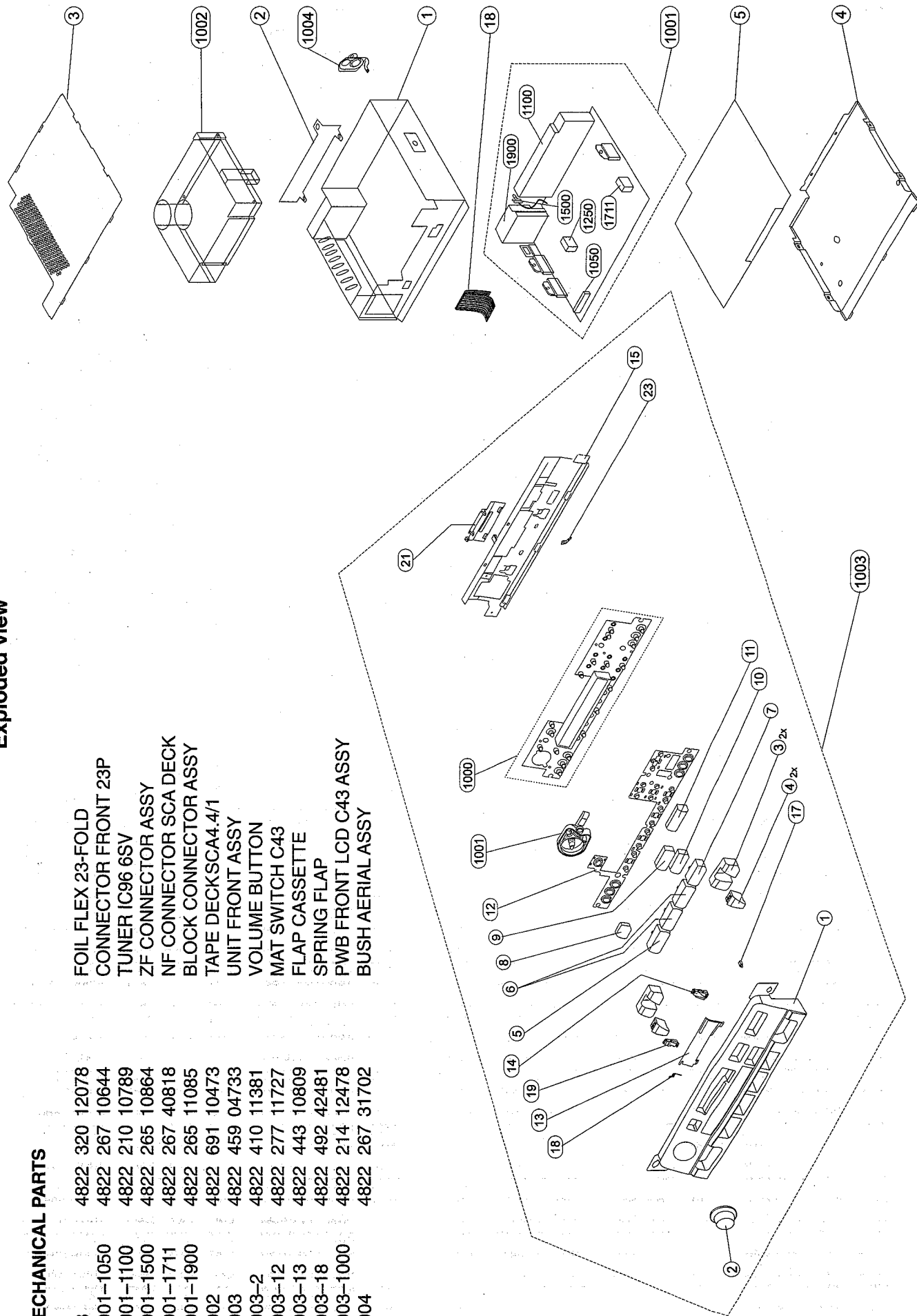
Pos. 7516, BC857

B: 4.9 V
C: 0 V
E: 4.9 V

Exploded view

MECHANICAL PARTS

18	4822	320	12078	FOIL FLEX 23-FOLD
1001-1050	4822	267	10644	CONNECTOR FRONT 23P
1001-1100	4822	210	10789	TUNER IC96 6SV
1001-1500	4822	265	10864	ZF CONNECTOR ASSY
1001-1711	4822	267	40818	NF CONNECTOR SCA DECK
1001-1900	4822	265	11085	BLOCK CONNECTOR ASSY
1002	4822	691	10473	TAPE DECKSCA4.4/1
1003	4822	459	04733	UNIT FRONT ASSY
1003-2	4822	410	11381	VOLUME BUTTON
1003-12	4822	277	11727	MAT SWITCH C43
1003-13	4822	443	10809	FLAP CASSETTE
1003-18	4822	492	42481	SPRING FLAP
1003-1000	4822	214	12478	PWB FRONT LCD C43 ASSY
1004	4822	267	31702	BUSH AERIAL ASSY



MISCELLANEOUS

4822901 10025	EEPROM DATA DISKETTE
1002 4822071 21003	FUSE 257010.(10A)
1200 4822242 72195	QUARZ 4.332 MHZ AT51
1600 4822242 10802	QUARZ 16.588 800 MHZ

CAPACITORS

2001 482212233496	CAP., CER. SMD	100NF10%X7R	63V	2223 482212441017	CAP., ELEC. ALU.	10UF	16V
2002 482212233496	CAP., CER. SMD	100NF10%X7R	63V	2224 482212423504	CAP., ELEC. ALU.	2.2UF20%	50V
2003 482212233496	CAP., CER. SMD	100NF10%X7R	63V	2225 532212610223	CAP., CER. SMD	4.7NF10%X7R	63V
2004 482212232142	CAP., CER. SMD	270PF 2%NP0	63V	2226 482212614165	CAP., CER. SMD	100NF 10%	25V
2005 482212232142	CAP., CER. SMD	270PF 2%NP0	63V	2227 532212233538	CAP., CER. SMD	150PF 2%NP0	63V
2006 482212233496	CAP., CER. SMD	100NF10%X7R	63V	2300 482212423279	CAP., ELEC. ALU.	22UF20%	16V
2007 482212231839	CAP., CER. SMD	82PF 2%NP0	63V	2301 482212423582	CAP., ELEC. ALU.	220UF	10V
2008 482212233496	CAP., CER. SMD	100NF10%X7R	63V	2302 482212613849	CAP., CER. SMD	220NF 10%	16V
2009 482212232142	CAP., CER. SMD	270PF 2%NP0	63V	2303 482212613849	CAP., CER. SMD	220NF 10%	16V
2010 482212232142	CAP., CER. SMD	270PF 2%NP0	63V	2304 482212613849	CAP., CER. SMD	220NF 10%	16V
2011 482212233496	CAP., CER. SMD	100NF10%X7R	63V	2305 482212613849	CAP., CER. SMD	220NF 10%	16V
2012 482212233496	CAP., CER. SMD	100NF10%X7R	63V	2306 532212231866	CAP., CER. SMD	6.8NF10%X7R	63V
2013 482212232142	CAP., CER. SMD	270PF 2%NP0	63V	2307 532212231866	CAP., CER. SMD	6.8NF10%X7R	63V
2014 482212233496	CAP., CER. SMD	100NF10%X7R	63V	2308 482212411884	CAP., ELEC. ALU.	4.7NF 10%X7R	16V
2015 482212232566	CAP., CER. SMD	3.9NF10%X7R	63V	2309 482212614165	CAP., CER. SMD	100NF 10%	25V
2016 482212232142	CAP., CER. SMD	270PF 2%NP0	63V	2310 482212614165	CAP., CER. SMD	100NF 10%	25V
2017 482212232142	CAP., CER. SMD	270PF 2%NP0	63V	2311 482212232627	CAP., CER. WIRE	2.7NF10%X7R	50V
2050 482212613849	CAP., CER. SMD	220NF 10%	16V	2312 482212411884	CAP., ELEC. ALU.	47NF 10%X7R	16V
2051 482212613849	CAP., CER. SMD	220NF 10%	16V	2313 482212411884	CAP., ELEC. ALU.	47NF 10%X7R	16V
2052 532212234123	CAP., CER. SMD	1NF10%X7R	50V	2314 482212614165	CAP., CER. SMD	100NF 10%	25V
2054 482212441017	CAP., ELEC. ALU.	10UF	16V	2315 482212614165	CAP., CER. SMD	100NF 10%	25V
2055 482212480453	CAP., ELEC. ALU.	100UF20%	10V	2316 482212232627	CAP., CER. WIRE	2.7NF10%X7R	50V
2056 482212480815	CAP., ELEC. ALU.	470UF20%	16V	2317 482212614165	CAP., CER. SMD	100NF 10%	25V
2058 482212423504	CAP., ELEC. ALU.	2.2UF20%	50V	2318 532212234123	CAP., CER. SMD	1NF10%X7R	50V
2100 532212233538	CAP., CER. SMD	150PF 2%NP0	63V	2319 482212614165	CAP., CER. SMD	100NF 10%	25V
2101 532212232654	CAP., CER. SMD	22NF10%X7R	63V	2321 482212613851	CAP., CER. SMD	68NF 10%	16V
2102 532212232654	CAP., CER. SMD	22NF10%X7R	63V	2322 482212614165	CAP., CER. SMD	100NF 10%	25V
2103 532212234098	CAP., CER. SMD	10NF10%X7R	63V	2323 482212441017	CAP., ELEC. ALU.	10UF	16V
2104 532212234098	CAP., CER. SMD	10NF10%X7R	63V	2325 482212613851	CAP., CER. SMD	68NF 10%	16V
2105 532212234098	CAP., CER. SMD	10NF10%X7R	63V	2326 532212234123	CAP., CER. SMD	1NF10%X7R	50V
2150 482212614165	CAP., CER. SMD	100NF 10%	25V	2327 532212234123	CAP., CER. SMD	1NF10%X7R	50V
2151 482212614165	CAP., CER. SMD	100NF 10%	25V	2328 532212234123	CAP., CER. SMD	1NF10%X7R	50V
2152 482212232627	CAP., CER. WIRE	2.7NF10%X7R	50V	2329 532212234123	CAP., CER. SMD	1NF10%X7R	50V
2153 482212232627	CAP., CER. WIRE	2.7NF10%X7R	50V	2330 482212232566	CAP., CER. SMD	3.9NF10%X7R	63V
2154 482212232627	CAP., CER. WIRE	2.7NF10%X7R	50V	2332 482212423282	CAP., ELEC. ALU.	1UF20%	50V
2155 482212232627	CAP., CER. WIRE	2.7NF10%X7R	50V	2334 482212232566	CAP., CER. SMD	3.9NF10%X7R	63V
2156 482212232627	CAP., CER. WIRE	2.7NF10%X7R	50V	2336 482212423282	CAP., ELEC. ALU.	1UF20%	50V
2157 482212232627	CAP., CER. WIRE	2.7NF10%X7R	50V	2400 482212423282	CAP., ELEC. ALU.	1UF20%	50V
2158 482212613849	CAP., CER. SMD	220NF 10%	16V	2401 482212423282	CAP., ELEC. ALU.	1UF20%	50V
2159 482212613849	CAP., CER. SMD	220NF 10%	16V	2402 482212480724	CAP., ELEC. ALU.	47UF20%	10V
2165 482212423282	CAP., ELEC. ALU.	1UF20%	50V	2403 482212423282	CAP., ELEC. ALU.	1UF20%	50V
2166 482212441017	CAP., ELEC. ALU.	10UF	16V	2404 482212423282	CAP., ELEC. ALU.	1UF20%	50V
2167 482212613849	CAP., CER. SMD	220NF 10%	16V	2405 482212441017	CAP., ELEC. ALU.	10UF	16V
2168 482212613849	CAP., CER. SMD	220NF 10%	16V	2406 482212480724	CAP., ELEC. ALU.	7UF20%	10V
2173 482212441017	CAP., ELEC. ALU.	10UF	16V	2411 482212614165	CAP., CER. SMD	100NF 10%	25V
2200 482212613689	CAP., CER. SMD	18PF 1% NP0	63V	2412 482212614165	CAP., CER. SMD	100NF 10%	25V
2201 482212613689	CAP., CER. SMD	18PF 1% NP0	63V	2413 532212234098	CAP., CER. SMD	10NF10%X7R	63V
2202 532212232654	CAP., CER. SMD	22NF10%X7R	63V	2414 532212234098	CAP., CER. SMD	10NF10%X7R	63V
2203 532212234123	CAP., CER. SMD	1NF10%X7R	50V	2415 532212234098	CAP., CER. SMD	10NF10%X7R	63V
2204 482212614165	CAP., CER. SMD	100NF 10%	25V	2416 532212234098	CAP., CER. SMD	10NF10%X7R	63V
2205 532212234098	CAP., CER. SMD	10NF10%X7R	63V	2417 532212234098	CAP., CER. SMD	10NF10%X7R	63V
2206 532212233538	CAP., CER. SMD	150PF 2%NP0	63V	2418 532212234098	CAP., CER. SMD	10NF10%X7R	63V
2207 532212233538	CAP., CER. SMD	150PF 2%NP0	63V	2419 532212234098	CAP., CER. SMD	10NF10%X7R	63V
2208 532212233538	CAP., CER. SMD	150PF 2%NP0	63V	2420 532212234098	CAP., CER. SMD	10NF10%X7R	63V
2209 532212233538	CAP., CER. SMD	150PF 2%NP0	63V	2422 482212411884	CAP., ELEC. ALU.	47NF 10%X7R	16V
2210 532212232452	CAP., CER. SMD	47PF 5%NP0	63V	2423 482212411884	CAP., ELEC. ALU.	47NF 10%X7R	16V
2211 482212614165	CAP., CER. SMD	100NF 10%	25V	2424 532212234098	CAP., CER. SMD	10NF10%X7R	63V
2213 532212234098	CAP., CER. SMD	10NF10%X7R	63V	2500 482212441017	CAP., ELEC. ALU.	10UF	16V
2214 532212231946	CAP., CER. SMD	27PF 5%NP0	63V	2501 482212480453	CAP., ELEC. ALU.	100UF20%	10V
2215 532212232452	CAP., CER. SMD	47PF 5%NP0	63V	2502 482212422646	CAP., ELEC. ALU.	47UF20%	16V
2216 482212233216	CAP., CER. SMD	270PF 5%NP0	50V	2503 532212614103	CAP., CER. SMD	2.2UF +80-20%	10V
2217 532212234098	CAP., CER. SMD	10NF10%X7R	63V	2504 532212614103	CAP., CER. SMD	2.2UF +80-20%	10V
2218 482212613689	CAP., CER. SMD	18PF 1% NP0	63V	2506 482212480769	CAP., ELEC. ALU.	2200UF20%	16V
2219 532212234123	CAP., CER. SMD	1NF10%X7R	50V	2507 482212441017	CAP., ELEC. ALU.	10UF	16V
2220 482212423504	CAP., ELEC. ALU.	2.2UF20%	50V	2508 482212614165	CAP., CER. SMD	100NF 10%	25V
2221 482212441017	CAP., ELEC. ALU.	10UF	16V	2510 482212423282	CAP., ELEC. ALU.	1UF20%	50V
2222 482212614165	CAP., CER. SMD	100NF 10%	25V	2514 482212423504	CAP., ELEC. ALU.	2.2UF20%	50V
				2515 532212234098	CAP., CER. SMD	10NF10%X7R	63V
				2516 532212234098	CAP., CER. SMD	10NF10%X7R	63V
				2517 532212234098	CAP., CER. SMD	10NF10%X7R	63V
				2519 532212234098	CAP., CER. SMD	10NF10%X7R	63V
				2520 482212614165	CAP., CER. SMD	100NF 10%	25V
				2521 532212234123	CAP., CER. SMD	1NF10%X7R	50V
				2522 482212614165	CAP., CER. SMD	100NF 10%	25V

2523	482212613849	CAP., CER. SMD	220NF 10%	16V	3082	482205120223	RES., CHIP	22K00 5%	0,1W
2525	532212234098	CAP., CER. SMD	10NF10%X7R	63V	3083	482205120223	RES., CHIP	22K00 5%	0,1W
2526	532212234098	CAP., CER. SMD	10NF10%X7R	63V	3084	482205120223	RES., CHIP	22K00 5%	0,1W
2527	532212234098	CAP., CER. SMD	10NF10%X7R	63V	3085	482205120223	RES., CHIP	22K00 5%	0,1W
2528	482212614165	CAP., CER. SMD	100NF 10%	25V	3102	482205120122	RES., CHIP	1K20 5%	0,1W
2530	482212411884	CAP., ELEC. ALU.	47NF 10%X7R	16V	3103	482205120479	RES., CHIP	47R00 5%	0,1W
2531	532212234123	CAP., CER. SMD	1NF10%X7R	50V	3104	482205120331	RES., CHIP	330R005%	0,1W
2533	532212231866	CAP., CER. SMD	6,8NF10%X7R	63V	3105	482205120104	RES., CHIP	100K005%	0,1W
2600	482212441017	CAP., ELEC. ALU.	10UF	16V	3106	482205120339	RES., CHIP	33R00 5%	0,1W
2601	532212234123	CAP., CER. SMD	1NF10%X7R	50V	3150	482205120104	RES., CHIP	100K005%	0,1W
2603	482212614165	CAP., CER. SMD	100NF 10%	25V	3151	482205120104	RES., CHIP	100K005%	0,1W
2604	482212614165	CAP., CER. SMD	100NF 10%	25V	3152	482205110183	RES., CHIP	18K00 2%	0,25W
2605	482212411884	CAP., ELEC. ALU.	47NF 10%X7R	16V	3153	482211710833	RES., CHIP	10K 1%	0,1W
2606	532212232654	CAP., CER. SMD	22NF10%X7R	63V	3154	482205120223	RES., CHIP	22K00 5%	0,1W
2607	532212234123	CAP., CER. SMD	1NF10%X7R	50V	3155	482205120561	RES., CHIP	560R005%	0,1W
2608	482212613849	CAP., CER. SMD	220NF 10%	16V	3156	482205120561	RES., CHIP	560R005%	0,1W
2609	482212614165	CAP., CER. SMD	100NF 10%	25V	3157	482205120223	RES., CHIP	22K00 5%	0,1W
2610	482212613693	CAP., CER. SMD	56PF 1% NP0	63V	3158	482205120223	RES., CHIP	22K00 5%	0,1W
2611	482212613689	CAP., CER. SMD	18PF 1% NP0	63V	3159	482205120104	RES., CHIP	100K005%	0,1W
2612	482212232627	CAP., CER. WIRE	2.7NF10%X7R	50V	3160	482205120473	RES., CHIP	47K00 1%	0,1W
2613	482212411884	CAP., ELEC. ALU.	47NF 10%X7R	16V	3161	482205120223	RES., CHIP	22K00 5%	0,1W
2614	482212411884	CAP., ELEC. ALU.	47NF 10%X7R	16V	3163	482205120223	RES., CHIP	22K00 5%	0,1W
2615	532212234123	CAP., CER. SMD	1NF10%X7R	50V	3177	482211710833	RES., CHIP	10K 1%	0,1W
2700	532211680853	CAP., CER. SMD	560PF 5%NP0	63V	3178	482205120104	RES., CHIP	100K005%	0,1W
2701	532211680853	CAP., CER. SMD	560PF 5%NP0	63V	3179	482205120223	RES., CHIP	22K00 5%	0,1W
2702	532212232654	CAP., CER. SMD	22NF10%X7R	63V	3200	482205120334	RES., CHIP	330K005%	0,1W
2703	532212234098	CAP., CER. SMD	10NF10%X7R	63V	3201	482205120008	RES., CHIP	0R00 JUMP. (0805)	
2704	482212613851	CAP., CER. SMD	68NF 10%	16V	3202	482211710833	RES., CHIP	10K 1%	0,1W
2705	532212232654	CAP., CER. SMD	22NF10%X7R	63V	3203	482205120102	RES., CHIP	1K00 5%	0,1W
2706	482212232627	CAP., CER. WIRE	2.7NF10%X7R	50V	3204	482211710833	RES., CHIP	10K 1%	0,1W
2707	532212234098	CAP., CER. SMD	10NF10%X7R	63V	3205	482205120104	RES., CHIP	100K005%	0,1W
2708	532212234098	CAP., CER. SMD	10NF10%X7R	63V	3207	482205120153	RES., CHIP	15K00 5%	0,1W
2709	532211680853	CAP., CER. SMD	560PF 5%NP0	63V	3208	482205120332	RES., CHIP	3K30 5%	0,1W
2710	532211680853	CAP., CER. SMD	560PF 5%NP0	63V	3209	482205120332	RES., CHIP	3K30 5%	0,1W
2711	532212234098	CAP., CER. SMD	10NF10%X7R	63V	3210	482211710833	RES., CHIP	10K 1%	0,1W
2712	482212480453	CAP., ELEC. ALU.	100UF20%	10V	3211	482205120393	RES., CHIP	39K00 5%	0,1W
2713	482212441017	CAP., ELEC. ALU.	10UF	16V	3212	482205120393	RES., CHIP	39K00 5%	0,1W
2714	482212441017	CAP., ELEC. ALU.	10UF	16V	3213	482211710833	RES., CHIP	10K 1%	0,1W
2715	482212480453	CAP., ELEC. ALU.	100UF20%	10V	3214	482211710833	RES., CHIP	10K 1%	0,1W
2716	482212441017	CAP., ELEC. ALU.	10UF	16V	3215	482205120824	RES., CHIP	820K005%	0,1W
2717	532211680853	CAP., CER. SMD	560PF 5%NP0	63V	3216	482211710833	RES., CHIP	10K 1%	0,1W
2800	482212614165	CAP., CER. SMD	100NF 10%	25V	3217	482205120393	RES., CHIP	39K00 5%	0,1W
2801	482212614165	CAP., CER. SMD	100NF 10%	25V	3218	482205120393	RES., CHIP	39K00 5%	0,1W
2804	482212441017	CAP., ELEC. ALU.	10UF	16V	3219	482211710833	RES., CHIP	10K 1%	0,1W
2905	482212613689	CAP., CER. SMD	18PF 1% NP0	63V	3220	482205120223	RES., CHIP	22K00 5%	0,1W
2906	482212614165	CAP., CER. SMD	100NF 10%	25V	3221	482211710965	RES., CHIP	18K 1%	0,1W
2907	482212614165	CAP., CER. SMD	100NF 10%	25V	3222	482205120225	RES., CHIP	2M20 5%	0,1W
2908	482212613689	CAP., CER. SMD	18PF 1% NP0	63V	3223	482205120224	RES., CHIP	220K005%	0,1W
RESISTORS AND JUMPERS					3224	482205120223	RES., CHIP	22K00 5%	0,1W
3053	482205120332	RES., CHIP	3K30 5%	0,1W	3251	482205120223	RES., CHIP	22K00 5%	0,1W
3054	482205120472	RES., CHIP	4K70 5%	0,1W	3252	482205120473	RES., CHIP	47K00 1%	0,1W
3055	482205120472	RES., CHIP	4K70 5%	0,1W	3253	482205120473	RES., CHIP	47K00 1%	0,1W
3056	482205120101	RES., CHIP	100R005%	0,1W	3300	482205120272	RES., CHIP	2K70 5%	0,1W
3057	482205120101	RES., CHIP	100R005%	0,1W	3301	482205120272	RES., CHIP	2K70 5%	0,1W
3058	482205120473	RES., CHIP	47K00 1%	0,1W	3302	482205120472	RES., CHIP	4K70 5%	0,1W
3059	482205120104	RES., CHIP	100K005%	0,1W	3303	482205120472	RES., CHIP	4K70 5%	0,1W
3060	482205120102	RES., CHIP	1K00 5%	0,1W	3306	482205120104	RES., CHIP	100K005%	0,1W
3061	482205120473	RES., CHIP	47K00 1%	0,1W	3307	482211710833	RES., CHIP	10K 1%	0,1W
3062	482205120104	RES., CHIP	100K005%	0,1W	3312	482205120561	RES., CHIP	560R005%	0,1W
3063	482205120473	RES., CHIP	47K00 1%	0,1W	3314	482205120561	RES., CHIP	560R005%	0,1W
3064	482205120272	RES., CHIP	2K70 5%	0,1W	3316	482205120109	RES., CHIP	10R00 5%	0,1W
3065	482211710833	RES., CHIP	10K 1%	0,1W	3317	482205120109	RES., CHIP	10R00 5%	0,1W
3066	482205120102	RES., CHIP	1K00 5%	0,1W	3318	482205120109	RES., CHIP	10R00 5%	0,1W
3069	482205120471	RES., CHIP	470R005%	0,1W	3319	482205120109	RES., CHIP	10R00 5%	0,1W
3070	482205120471	RES., CHIP	470R005%	0,1W	3400	482205120102	RES., CHIP	1K00 5%	0,1W
3073	482205120473	RES., CHIP	47K00 1%	0,1W	3401	482205120104	RES., CHIP	100K005%	0,1W
3074	482205120272	RES., CHIP	2K70 5%	0,1W	3402	482205120473	RES., CHIP	47K00 1%	0,1W
3076	482205120223	RES., CHIP	22K00 5%	0,1W	3404	482205120472	RES., CHIP	4K70 5%	0,1W
3077	482205120223	RES., CHIP	22K00 5%	0,1W	3405	482205120104	RES., CHIP	100K005%	0,1W
3078	482205120223	RES., CHIP	22K00 5%	0,1W	3406	482211712817	RES., NON-LIN.	4K7 5%	0,21W
3079	482205120008	RES., CHIP	0R00 JUMP. (0805)		3413	482205120109	RES., CHIP	10R00 5%	0,1W
3080	482205120223	RES., CHIP	22K00 5%	0,1W	3414	482205120109	RES., CHIP	10R00 5%	0,1W
3081	482205120223	RES., CHIP	22K00 5%	0,1W	3415	482205120109	RES., CHIP	10R00 5%	0,1W
					3416	482205120109	RES., CHIP	10R00 5%	0,1W

3417	482205120109	RES., CHIP	10R00 5%	0,1W
3418	482205120109	RES., CHIP	10R00 5%	0,1W
3419	482205120109	RES., CHIP	10R00 5%	0,1W
3420	482205120109	RES., CHIP	10R00 5%	0,1W
3500	482205120104	RES., CHIP	100K005%	0,1W
3501	482205120104	RES., CHIP	100K005%	0,1W
3502	482205120224	RES., CHIP	220K005%	0,1W
3503	482205120473	RES., CHIP	47K00 1%	0,1W
3504	482205120223	RES., CHIP	22K00 5%	0,1W
3505	482211710833	RES., CHIP	10K 1%	0,1W
3509	482205120331	RES., CHIP	330R005%	0,1W
3510	482205120474	RES., CHIP	470K005%	0,1W
3511	482205120224	RES., CHIP	220K005%	0,1W
3512	482205120473	RES., CHIP	47K00 1%	0,1W
3513	482205120683	RES., CHIP	68K00 5%	0,1W
3514	482205120102	RES., CHIP	1K00 5%	0,1W
3515	482205120104	RES., CHIP	100K005%	0,1W
3517	482205120224	RES., CHIP	220K005%	0,1W
3518	482205120472	RES., CHIP	4K70 5%	0,1W
3519	482205120224	RES., CHIP	220K005%	0,1W
3520	482205120224	RES., CHIP	220K005%	0,1W
3522	482205120473	RES., CHIP	47K00 1%	0,1W
3524	482205120223	RES., CHIP	22K00 5%	0,1W
3525	482211711447	RES., CARBON	1K2 1%	0,1W
3526	482211711449	RES., CARBON	2K2 1%	0,1W
3527	482211711377	RES., CHIP	5K1 1%	0,1W
3528	482211712817	RES., NON-LIN.	4K7 5%	0,21W
3529	482205120223	RES., CHIP	22K00 5%	0,1W
3530	482211710837	RES., CHIP	100K 1%	0,1W
3531	482205120224	RES., CHIP	220K005%	0,1W
3532	482205120479	RES., CHIP	47R00 5%	0,1W
3533	482211710833	RES., CHIP	10K 1%	0,1W
3534	482205120104	RES., CHIP	100K005%	0,1W
3535	482205120473	RES., CHIP	47K00 1%	0,1W
3536	482211710833	RES., CHIP	10K 1%	0,1W
3537	482205120104	RES., CHIP	100K005%	0,1W
3538	482205120104	RES., CHIP	100K005%	0,1W
3539	482205120224	RES., CHIP	220K005%	0,1W
3540	482211710833	RES., CHIP	10K 1%	0,1W
3541	482205120102	RES., CHIP	1K00 5%	0,1W
3542	482211710833	RES., CHIP	10K 1%	0,1W
3543	482205120473	RES., CHIP	47K00 1%	0,1W
3544	482205120224	RES., CHIP	220K005%	0,1W
3545	482205120683	RES., CHIP	68K00 5%	0,1W
3549	482205120473	RES., CHIP	47K00 1%	0,1W
3550	482205120224	RES., CHIP	220K005%	0,1W
3551	482205120223	RES., CHIP	22K00 5%	0,1W
3552	482205120473	RES., CHIP	47K00 1%	0,1W
3553	482205120102	RES., CHIP	1K00 5%	0,1W
3555	482205120102	RES., CHIP	1K00 5%	0,1W
3556	482205120102	RES., CHIP	1K00 5%	0,1W
3557	482205120224	RES., CHIP	220K005%	0,1W
3600	482205120101	RES., CHIP	100R005%	0,1W
3601	482205120102	RES., CHIP	1K00 5%	0,1W
3602	482205120471	RES., CHIP	470R005%	0,1W
3603	482205120272	RES., CHIP	2K70 5%	0,1W
3604	482205120272	RES., CHIP	2K70 5%	0,1W
3606	482205120102	RES., CHIP	1K00 5%	0,1W
3608	482205120471	RES., CHIP	470R005%	0,1W
3609	482205120109	RES., CHIP	10R00 5%	0,1W
3612	482205120008	RES., CHIP	0R00 JUMP. (0805)	
3613	482205120471	RES., CHIP	470R005%	0,1W
3615	482205120824	RES., CHIP	820K005%	0,1W
3616	482205120272	RES., CHIP	2K70 5%	0,1W
3617	482205120272	RES., CHIP	2K70 5%	0,1W
3618	482205120473	RES., CHIP	47K00 1%	0,1W
3619	482205120473	RES., CHIP	47K00 1%	0,1W
3620	482205120473	RES., CHIP	47K00 1%	0,1W
3621	482205120104	RES., CHIP	100K005%	0,1W
3622	482205120473	RES., CHIP	47K00 1%	0,1W
3700	482205120822	RES., CHIP	8K20 5%	0,1W
3701	482205120104	RES., CHIP	100K005%	0,1W
3702	482205120104	RES., CHIP	100K005%	0,1W
3705	482205120104	RES., CHIP	100K005%	0,1W

3706	482205120104	RES., CHIP	100K005%	0,1W
3711	482205120274	RES., CHIP	270K005%	0,1W
3712	482205120822	RES., CHIP	8K20 5%	0,1W
3713	482205120473	RES., CHIP	47K00 1%	0,1W
3714	482205120274	RES., CHIP	270K005%	0,1W
3715	482205120822	RES., CHIP	8K20 5%	0,1W
3716	482211710965	RES., CHIP	18K 1%	0,1W
3717	482205120223	RES., CHIP	22K00 5%	0,1W
3718	482205120272	RES., CHIP	2K70 5%	0,1W
3719	482205120479	RES., CHIP	47R00 5%	0,1W
3720	482205120109	RES., CHIP	10R00 5%	0,1W
3721	482205120104	RES., CHIP	100K005%	0,1W
3722	482205120104	RES., CHIP	100K005%	0,1W
3725	482205120223	RES., CHIP	22K00 5%	0,1W
3729	482205120104	RES., CHIP	100K005%	0,1W
3733	482205120104	RES., CHIP	100K005%	0,1W
3736	482211710507	RES., CHIP	24K 1%	0,1W
3737	482210011681	RES., VARIAB.	1K 30%	0,1W
3739	482211710507	RES., CHIP	24K 1%	0,1W
3741	482205120471	RES., CHIP	470R005%	0,1W
3742	482210011681	RES., VARIAB.	1K 30%	0,1W
3745	482211710507	RES., CHIP	24K 1%	0,1W
3747	482205120471	RES., CHIP	470R005%	0,1W
3748	482205120272	RES., CHIP	2K70 5%	0,1W
3749	482211710507	RES., CHIP	24K 1%	0,1W
3750	482205120272	RES., CHIP	2K70 5%	0,1W
3800	482205120332	RES., CHIP	3K30 5%	0,1W
3801	482211710965	RES., CHIP	18K 1%	0,1W
3802	482205120109	RES., CHIP	10R00 5%	0,1W
3804	482205120473	RES., CHIP	47K00 1%	0,1W
3805	482205120104	RES., CHIP	100K005%	0,1W
3812	482205120683	RES., CHIP	68K00 5%	0,1W
3813	482205120272	RES., CHIP	2K70 5%	0,1W
3815	482205120223	RES., CHIP	22K00 5%	0,1W
3816	482205120104	RES., CHIP	100K005%	0,1W
3820	482205120223	RES., CHIP	22K00 5%	0,1W
3821	482211710833	RES., CHIP	10K 1%	0,1W
3828	482205120479	RES., CHIP	47R00 5%	0,1W
4100	482205120008	RES., CHIP	0R00 JUMP. (0805)	
4101	482205120008	RES., CHIP	0R00 JUMP. (0805)	
4401	482205110008	RES., CHIP	0R00 5%	0,25W
4403	482205110008	RES., CHIP	0R00 5%	0,25W
4404	482205120008	RES., CHIP	0R00 JUMP. (0805)	
4406	482205120008	RES., CHIP	0R00 JUMP. (0805)	
4412	482205110008	RES., CHIP	0R00 5%	0,25W
4414	482205110008	RES., CHIP	0R00 5%	0,25W
4702	482205120008	RES., CHIP	0R00 JUMP. (0805)	
4703	482205120008	RES., CHIP	0R00 JUMP. (0805)	
4800	482205120008	RES., CHIP	0R00 JUMP. (0805)	
4801	482205120008	RES., CHIP	0R00 JUMP. (0805)	

COILS

5100	482215771267	BLM31BG01SPT
5101	482215771267	BLM31BG01SPT
5200	482215771267	BLM31BG01SPT
5500	482215771294	47UH 10%
5501	482215711396	350UH
5600	482215771267	BLM31BG01SPT
5601	482215771267	BLM31BG01SPT
5800	482215710396	LQH4N 33U 10%

DIODES

6050	532213034337	BAV99
6051	482213011013	UDZ16B
6052	482213010655	1SR154-400
6200	532213034337	BAV99
6201	532213034337	BAV99
6300	482213083757	BAS216
6500	482213083757	BAS216
6501	482213083757	BAS216
6504	482213010655	1SR154-400
6506	482213011014	PBYR1045F
6507	482213010655	1SR154-400
6508	532213034331	BAV70

6509	532213034331	BAV70
6510	532213034331	BAV70
6511	532213034331	BAV70
6512	532213030691	BAW56
6514	482213010185	UDZ5.6B
6516	482213010655	1SR154-400
6517	482213011013	UDZ16B
6518	482213083757	BAS216
6519	482213083757	BAS216
6700	532213034337	BAV99
6802	482213083757	BAS216
6804	532213030691	BAW56

TRANSISTORS AND IC's

7050	482213060511	TRANS., CHIP	BC847B
7052	482213060511	TRANS., CHIP	BC847B
7053	532213060508	TRANS., CHIP	BC857B
7054	482213042132	TRANS., CHIP	BC807
7055	482213060511	TRANS., CHIP	BC847B
7056	482213042132	TRANS., CHIP	BC807
7057	532213060508	TRANS., CHIP	BC857B
7100	482213042131	TRANS., CHIP	BF550
7150	482213060511	TRANS., CHIP	BC847B
7151	482213060511	TRANS., CHIP	BC847B
7152	482220933636	IC ANA.	HA12161FP
7153	482213060511	TRANS., CHIP	BC847B
7200	482213060511	TRANS., CHIP	BC847B
7201	482220915823	IC ANA AMP.	TL074ID
7205	482220915824	IC ANA.	TDA7331
7251	482213060511	TRANS., CHIP	BC847B
7300	482220912723	MOS INTERF.	TDA7342
7400	482213060511	TRANS., CHIP	BC847B
7401	482220933629	IC ANA.	TDA7375
7402	482220933629	IC ANA.	TDA7375
7500	482213060511	TRANS., CHIP	BC847B
7501	482213060511	TRANS., CHIP	BC847B
7503	482213060511	TRANS., CHIP	BC847B
7504	482213060511	TRANS., CHIP	BC847B
7505	482213011015	IC ANA REGUL.	BSP350
7506	532220911548	IC DIG MOS	74HC14D
7507	482213060511	TRANS., CHIP	BC847B
7508	532213060508	TRANS., CHIP	BC857B
7512	482220915826	IC ANA.	L9820D
7513	482220933029	IC ANA.	TDA3602/N3
7515	532220914877	IC DIG MOS	HEF4528BT
7516	532213060508	TRANS., CHIP	BC857B
7600	482220915931	IC DIG MOS	P87CE560EFB/00+C43
7601	482220915827	IC DIG MOS	ST24C16M6
7602	532213060508	TRANS., CHIP	BC857B
7700	482213060511	TRANS., CHIP	BC847B
7701	482213060511	TRANS., CHIP	BC847B
7706	482213060511	TRANS., CHIP	BC847B
7710	482220915349	IC ANA AMP.	TEA0676T/V1
7800	482213060511	TRANS., CHIP	BC847B
7801	482213060511	TRANS., CHIP	BC847B
7803	482220915825	IC ANA.	E100.20B
7805	532213060508	TRANS., CHIP	BC857B

ELECTRICAL PARTS FRONT PWB

1000	482226710644	CONNECTOR FRONT 23P
1001	532229061156	CONNECTOR INCR. 5P
2100	482212614165	CAP., CER. SMD 100NF 10% 25V
2101	482212614165	CAP., CER. SMD 100NF 10% 25V
2102	482212614165	CAP., CER. SMD 100NF 10% 25V
2103	482212614165	CAP., CER. SMD 100NF 10% 25V
2104	482212614165	CAP., CER. SMD 100NF 10% 25V
2105	532212232531	CAP., CER. SMD 100PF 5% 50V
2106	482212614165	CAP., CER. SMD 100NF 10% 25V
2107	482212614165	CAP., CER. SMD 100NF 10% 25V
3100	482205120332	RES., CHIP 3K30 5% 0,1W
3101	482205120272	RES., CHIP 2K70 5% 0,1W
3102	482205120561	RES., CHIP 560R005% 0,1W
3103	482205120272	RES., CHIP 2K70 5% 0,1W
3104	482205120332	RES., CHIP 3K30 5% 0,1W
3105	482211711449	RES., CARBON 2K2 1% 0,1W
3106	482211710353	RES., CHIP 150R 1% 0,1W
3107	482205120334	RES., CHIP 330K005% 0,1W
3108	482211630423	RES., CHIP 10K 20% NTC
3109	482205120272	RES., CHIP 2K70 5% 0,1W
3110	482205120272	RES., CHIP 2K70 5% 0,1W
3111	482211710833	RES., CHIP 10K 1% 0,1W
3210	482205110681	RES., CHIP 680R002% 0,25W
3212	482205110102	RES., CHIP 1K00 2% 0,25W
3214	482205110102	RES., CHIP 1K00 2% 0,25W
3216	482205110471	RES., CHIP 470R002% 0,25W
3222	482205110271	RES., CHIP 270R002% 0,25W
3223	482205110122	RES., CHIP 1K20 2% 0,25W
3225	482205110681	RES., CHIP 680R002% 0,25W
3230	482205110152	RES., CHIP 1K50 2% 0,25W
6101	482213010877	DIODE, REF. UDZ9.1B
7100	532220931185	IC DIG MOS PCF8578T LCD SMD
7101	532220931186	IC DIG MOS PCF8579T LCD SMD

ELECTRICAL PARTS PULSE SWITCH ASSY

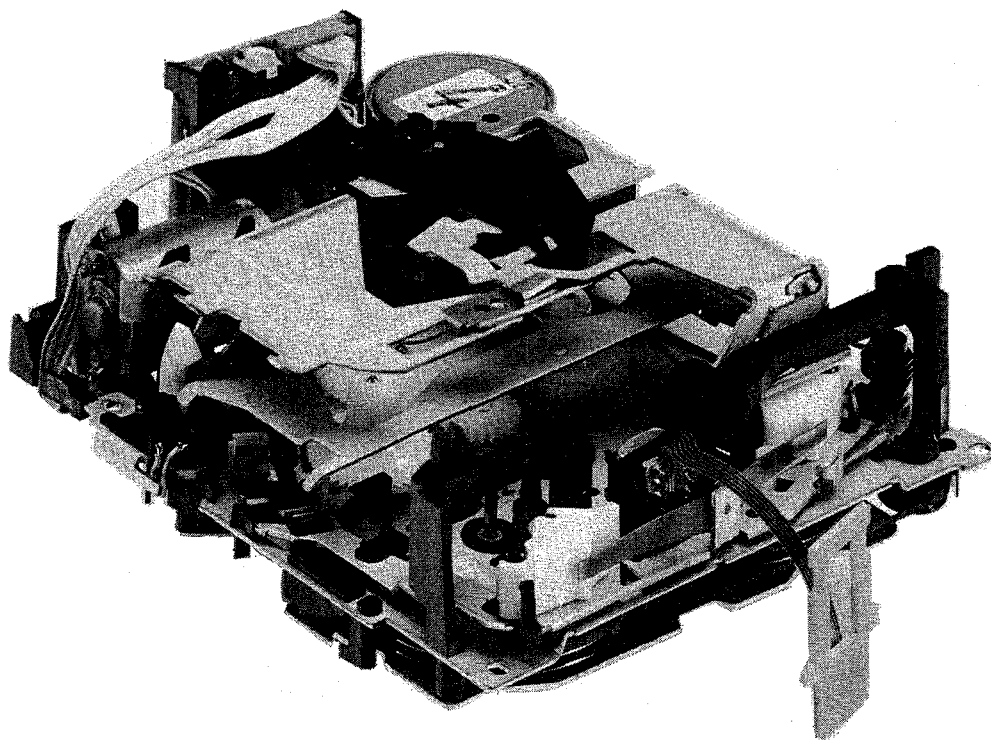
	482221412479	PULSE-SWITCH ASSY COMPLETE
1001	482232012086	FOIL FLEX 5-FOLD
1005	482210130873	INCREMENT SWITCH

Service
Service
Service



Service Manual

12 V 



MECHANICAL SPECIFICATION

Operating positions:	Any position from horizontal to 45° standing vertically on the rear side.
Operating temperature:	-20°C to +70°C
Tape speed:	4,76 cm/sec
Wow and flutter:	< 0,5% unweighted < 0,3% weighted
Winding time:	
Test tape: RCA 118 (C60)	< 110 sec
Eject and loading time:	< 2 sec

ELECTRICAL SPECIFICATION

Voltage:	min 10,6 V max 16,0 V
Current - playback:	200 mA
Current - fast wind:	150 mA
Current - eject, standby:	100 µA
Hold in voltage:	8,0 V
Capstan motor:	14,4 V
Servo motor:	2 V DC Play 11,5 V DC Fast, Servo

Playback Crosstalk

ch. 1 - 2 / 3 - 4	> 36 dB
ch. 2 - 3	> 46 dB

FEATURES

The SCA-4.4 tape deck is usable in several sets. Most of the control functions depend on the hard- and software-configuration of the set in which the deck is installed.

The set µC can control soft eject, emergency eject, standby mode, reverse function, MSS, ME/FE and DOLBY indication.

Some versions of the deck could be equipped with a grooved head and/or a preamplifier circuit.

HANDLING AND DEMOUNTING INSTRUCTIONS

GENERAL

- Protect the tape deck against ESD !
- Plastic catches and snap connections must be released careful with screwdriver or tweezers.
- Cables must be laid in the defined cable guidings after mounting.
- For lubrication see indications in the exploded view.
- To clean tape transport and head only use moist cleaning tapes or piece of cloth, take care that no fluid (alcohol) drops into the bearing.
- For transport lift/carrier assy must be in eject position, do not carry the deck by touching the lift/carrier.
- Use a screwdriver 2,5 mm with insulated shaft for adjusting drift.
- Screw the deck into the set in order: Front right, front left, rear left, rear right.

DEMOUNTING

1. Carrier/lift (44)
 - 1.1 Lift in eject position - put leg of eject spring (12) into mounting position acc. fig. 8 and fig. 2 - J
 - 1.2 Lift in play position - unclamp cassette holder (49) from eject lever (48) with a left-upwards motion acc. fig.1-B
 - 1.3 Lift in eject position - push plastic hook (fig.1-D) and pull out eject lever, remember position of ejector spring (55) and switching pin (54) for re-assembly later on
 - 1.4 Release fixation lever (fig.1-F) by clicking out in left direction and then turn to the right
 - 1.5 Lift in mid position - take out carrier and lift by releasing plastic hooks at the left (fig.1-G)
2. Head support
 - 2.1 Take out carrier/lift according 1.
 - 2.2 Remove head carrier spring (37)
 - 2.3 Turn head support fixation lever acc. fig.3-A
 - 2.4 Position pin of switching lever (20) to max. left point, see fig.3-detail I
 - 2.5 Release plastic snapper (fig.3-H) and take out head support assembly
!!! TAKE CARE NOT TO BENT THE HEAD CARRIER !!!
 - 2.6 Press plastic fixation (fig.3-detail E,F) and take out magnetic head
 - 2.7 Push pressure spring (27) acc. fig.3-D and move it out
 - 2.8 Release plastic hooks (fig.3-B,C) to pull pinch rollers (45+68) out
 - 2.9 Take off anchor spring (13), rotate anchor (2) 90°degrees to take it out (fig.4-A,B,C)
3. Capstan motor (32)

Remove belt (30) from driving wheel, desolder connection cables, unscrew the two torx screws at the bottom of chassis and take out capstan motor
!!! TAKE CARE OF CORRECT AND UNTWISTED MOUNTING OF THE BELT !!!
4. Servo motor (14)

Desolder connection cables and lever up motor out of its clamps (fig.2-F,G)
5. Clutch assy (57-59)
 - 5.1 Remove servo motor acc. 4.
 - 5.2 Cut disk (65) and remove it (must be renewed)
 - 5.3 Pull clutch from the axle (fig.2-H,I)
6. Anchor holder (8) and magnet double (1)
 - 6.1 Desolder cables of magnet
 - 6.2 Swivel anchor holder counter-clockwise and press it off applying force near the pivoting point
 - 6.3 Release plastic clamps of magnet holder and press magnet out from top of the chassis (fig.4-E)
7. Driving belt (30), flywheels (23) and bearings (70)
 - 7.1 Release pivot plate (35) by turning the plastic hooks acc.fig.5-A,B
 - 7.2 Remove pivot plate and driving belt
 - 7.3 Pull out flywheels
 - 7.4 Press bearings out of plastic housings from top side of chassis plate, use a plastic tool with diameter 4mm in order not to damage the housings
 - 7.5 After mounting new flywheels, bearings or pivot plate you have to test wow and flutter because every deck is adjusted individual for these components. If the values of wow and flutter are out of specification, you have to exchange complete deck !
 - 7.6 Degrease capstan axis after re-mounting the flywheels
8. Connection wheel (5), take up wheels (6), backtension springs (69)
 - 8.1 Take out carrier/lift acc. 1.
 - 8.2 Lever up connection wheel from axle (must be renewed)
 - 8.3 Cut disks (65) and remove them (must be renewed)
 - 8.4 Unclamp and pull up wheels with puller (fig.2-A,B)
 - 8.5 Take out backtension springs
9. ME/CR Switch (60)
 - 9.1 Desolder connection cables
 - 9.2 Push with a small pin through the hole at the bottom of the chassis, directly under the switch

10. ON/OFF Switch (26)
 - 10.1 Desolder connection cables
 - 10.2 Lever up switch or push with a small pin through the hole at the bottom of the chassis, directly under the switch if servo motor and clutch were removed previously
11. Control pins (16), gear lever (17), play reverse lever (18)
 - 11.1 Remove flywheels acc. 7
 - 11.2 Remove play reverse lever
 - 11.3 Put control pins into mounting position acc. fig.6-D,E
 - 11.4 Take out gear lever
 - 11.5 Pull out control pins
12. Switching lever (20), swivel wheel assembly (7,15,43)
 - 12.1 Release spring (53) from black plastic pin
 - 12.2 Turn switching lever acc. fig.7-A
 - 12.3 Lever up switching lever from axle
 - 12.4 Remove connection wheel acc. 8
 - 12.5 Take out swivel wheel assembly
13. Switching pin (54), transport rod (25), latch (21)
 - 13.1 Remove ON/OFF Switch acc. 10
 - 13.2 Lever up switching pin from axle
 - 13.3 Remove switching lever acc. 12
 - 13.4 Move out transport rod and latch

TOOLS REQUIRED

Test cassette SBC 420	4822 397 30071
Test cassette SBC 419	4822 397 30069
Friction test cassette	4822 395 30054
Puller for clutch (fig.2)	4822 395 60039

ADJUSTMENTS

TORQUE OF REELS (FRICTION)

Adjust potmeter pos. 3409 until friction test cassette shows 9,5 +/- 1,5 mNm in NOR direction (after 2 minutes) and 8,5 +/- 1,5 mNm in REV direction. Backtension must be 0,3 to 0,7 mNm.
If values deviate check lubrication, clutch, take up wheels and backtension springs.

WOW AND FLUTTER, TAPE SPEED

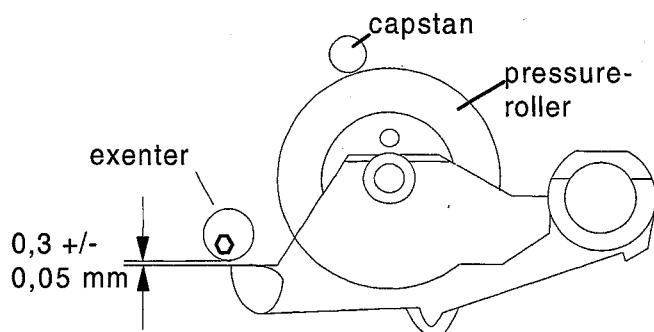
Connect wow and flutter meter to loudspeaker outputs and play the 3150 Hz signal track of test cassette SBC 420. Value should be max. 0,5% (unweighted).

If value deviates check motors, pressure rollers, flywheels, belt, pulley and backtension springs.

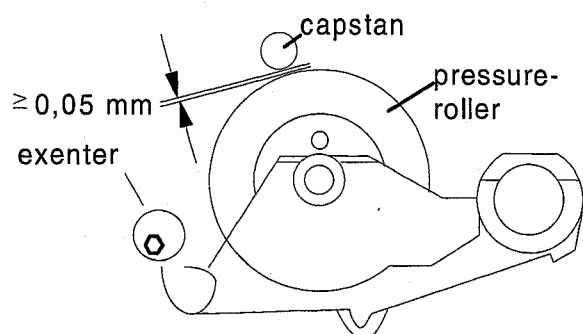
Tape speed can be adjusted with motor potentiometer A (see fig.8). Use a screwdriver with insulated shaft !

PRESSURE ROLLER / CAPSTAN (see figures below)

Adjust clearance play-NOR position between pressure roller and stop head carrier



Adjust clearance FFW position between pressure roller and capstan



EJECTOR 48, HOLDER 49, LIFT 44

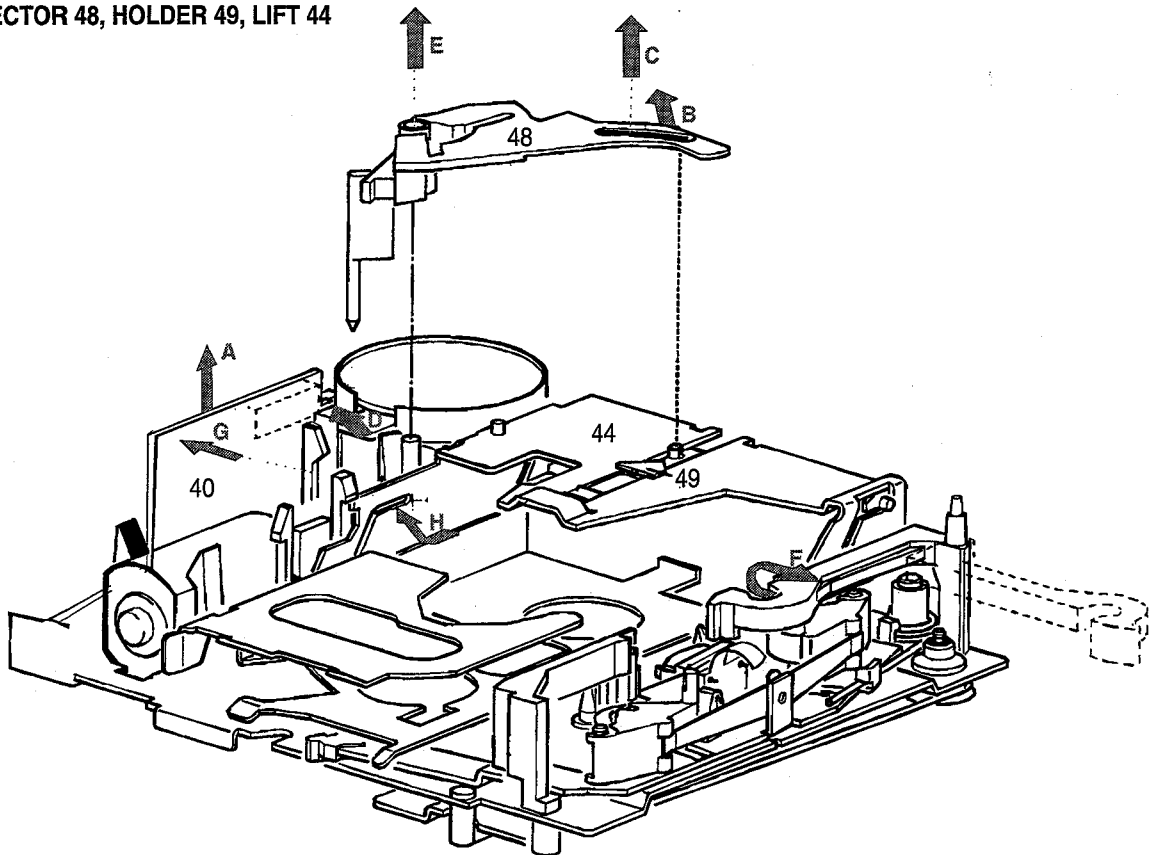


Fig. 1

CLUTCH 59, SWITCH 60, GEAR WHEEL 5, CARRIER 6

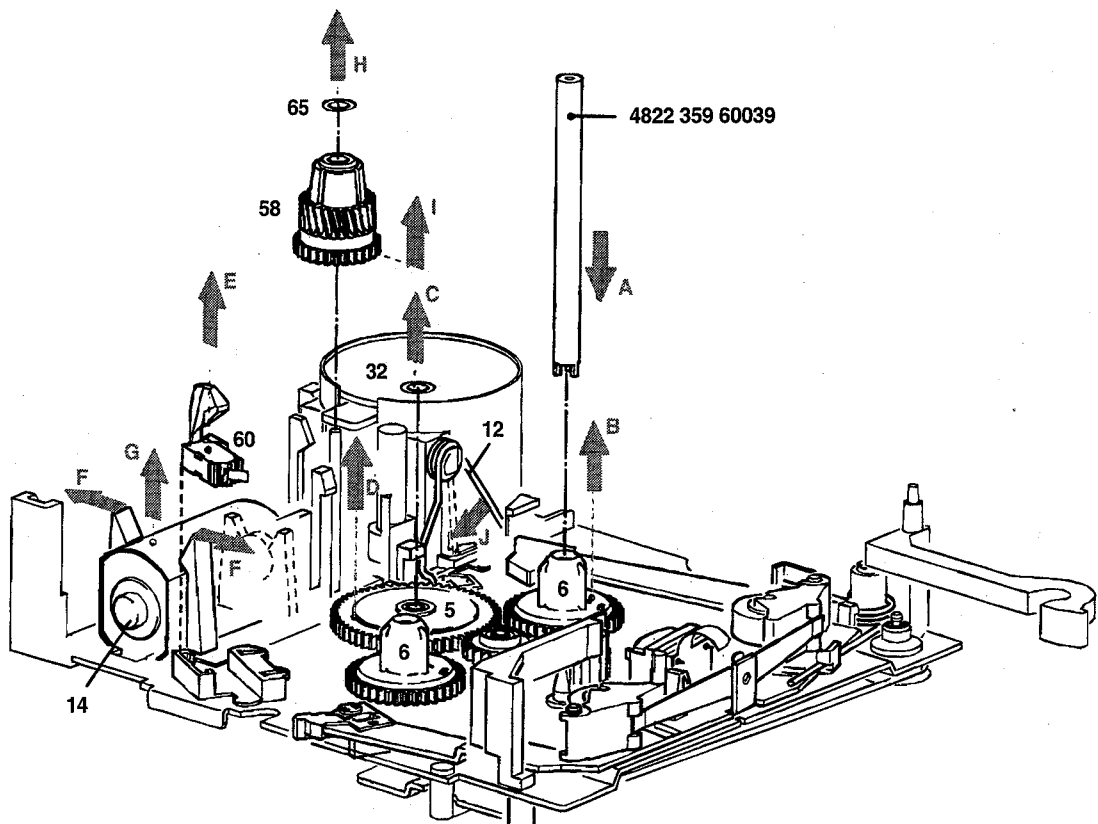


Fig. 2

PRESSURE ROLLER 45, HEAD BRACKET 33, HEAD 34

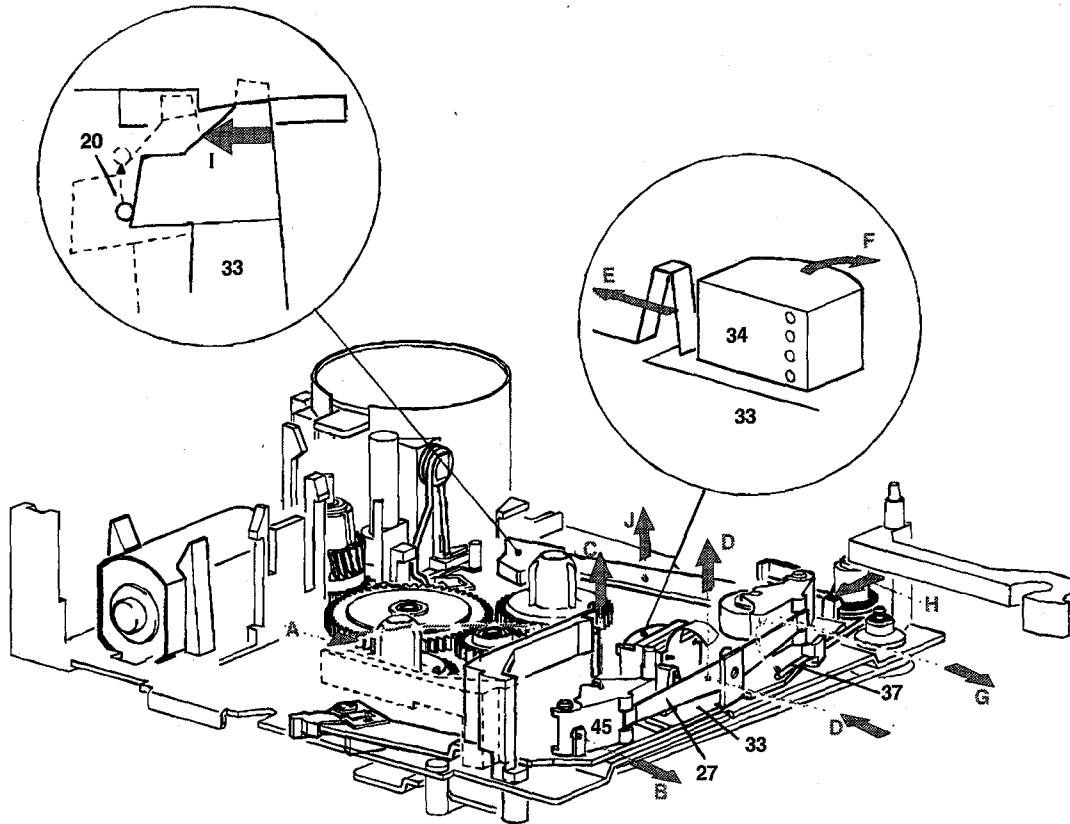


Fig. 3

ANCHOR 3/5, RELAY 1

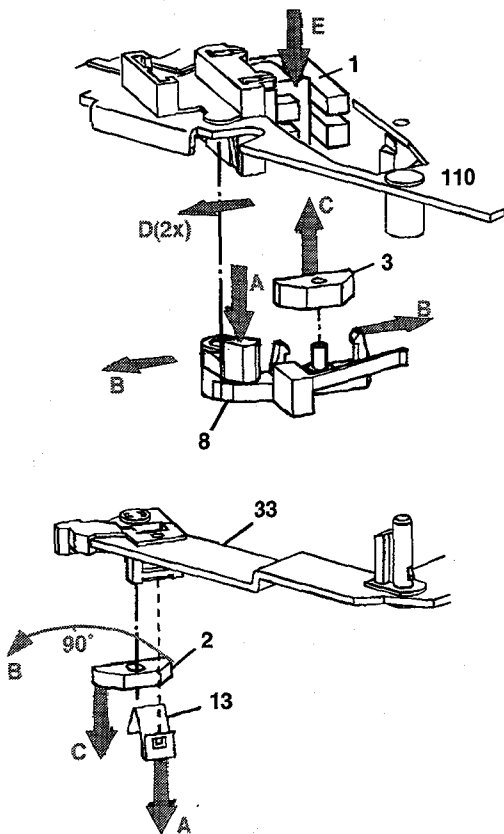


Fig. 4

FLYWHEEL 23, BELT 30

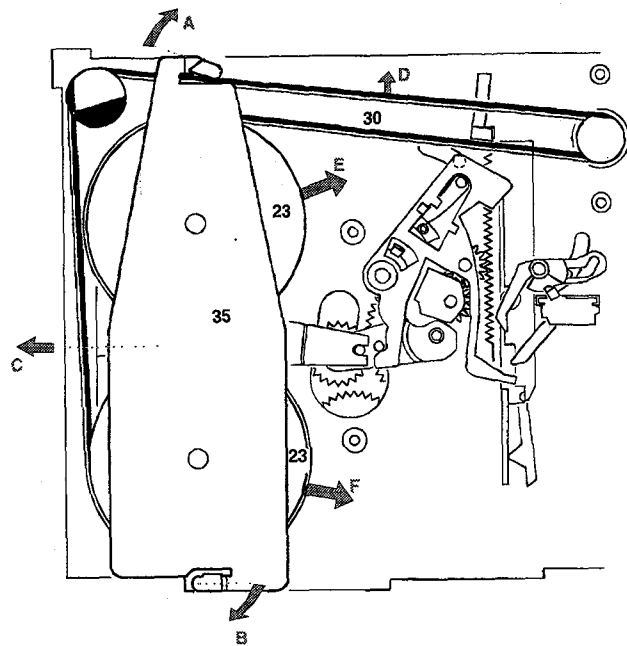


Fig. 5

SEGMENT 16, BRACKET 17, BEARING 70

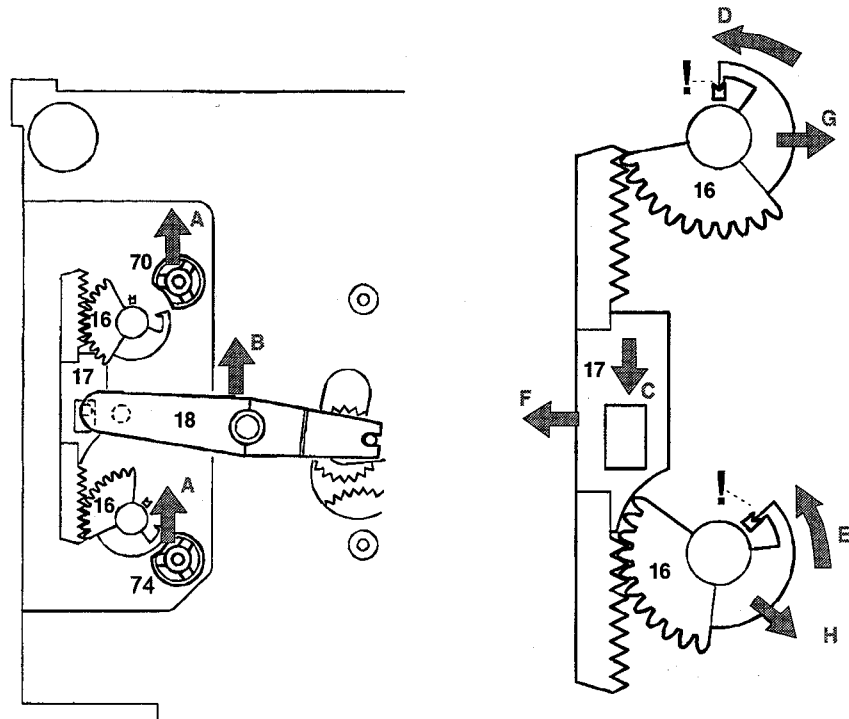


Fig. 6

SWITCH 26, SWIVEL GEAR 7, LEVER 20

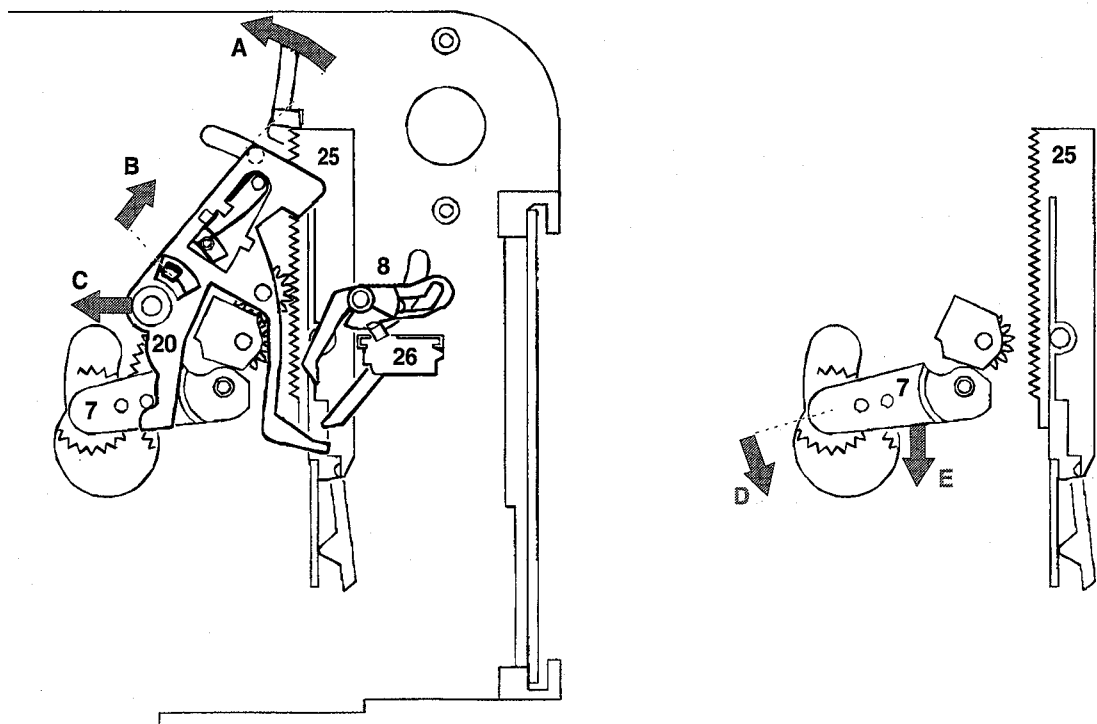
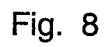


Fig. 7



MEASUREMENTS ON CONTROL PCB

ME/FE: 0,0 V (FE) / 5,0 V (ME/CR)
ON/OFF: 0,0 V (ON) / 5,0 V (OFF)

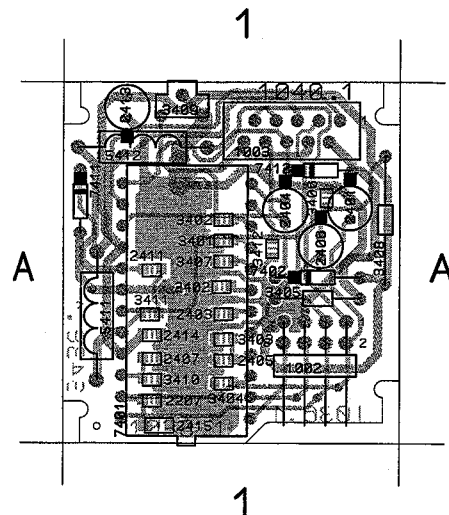
Pos. 7401 TDA 3611

- 1: 5,0 V
- 2: 5,0 V
- 3: 0,7 V / 0,0 V (Sb)
- 4: 0,8 V (PN) / 0,9 V (PR) / 0,3 V (W) / 0,0 V (Sb)
- 5: 0,8 V (PN) / 1,0 V (PR) / 0,4 V (W) / 0,0 V (Sb) / 0,1 V (TA)
- 6: 0,8 V (PN) / 1,0 V (PR) / 0,4 V (W) / 0,0 V (Sb) / 0,1 V (TA)
- 7: 0,7 V (P) / 1,8 V (W) / 0,0 V (Sb) / 0,6 V (TA)
- 8: 3,4 V / 0,0 V (Sb)
- 9: 1,2 V / 0,0 V (Sb)
- 10: 0,5 V / 0,0 V (Sb)
- 11: 3,4 V / 0,0 V (Sb)
- 12: 12,0 V
- 13: 0,5 V / 12,0 V (Sb)
- 14: 0,0 V / 11,5 V (P)
- 15: 11,5 V / 12,0 V (Sb)
- 16: 12,0 V
- 17: 0,1 V (PN) / 2,4 V (PR) / 0,0 V (WN) / 12,0 V (WR) / 0,0 V (Sb)
- 18: GND
- 19: 12,0 V / 8,5 V (P)
- 20: 2,4 V (PN) / 0,1 V (PR) / 12,0 V (WN) / 0,0 V (WR) / 0,0 V (Sb)
- 21: 12,0 V
- 22: 3,6 V (P) / 1,3 V (W) / 0,0 V (Sb)
- 23: 5,0 V
- 24: 5,0 V

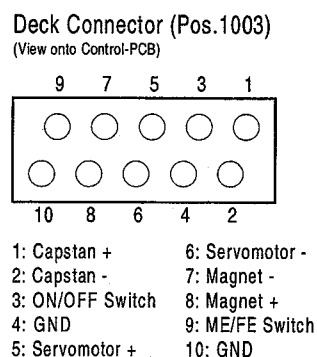
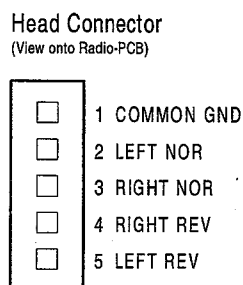
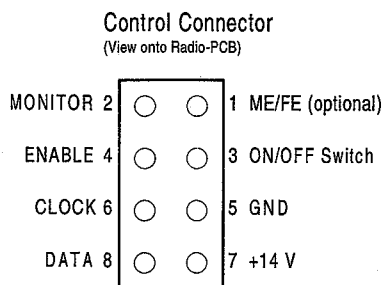
All values measured DC - GND

(P) = Play mode both directions
(W) = Wind mode both directions
(PN) = Play NOR direction
(PR) = Play REV direction
(WN) = Wind NOR direction
(WR) = Wind REV direction
(Sb) = Standby
(TA) = Traffic announcement

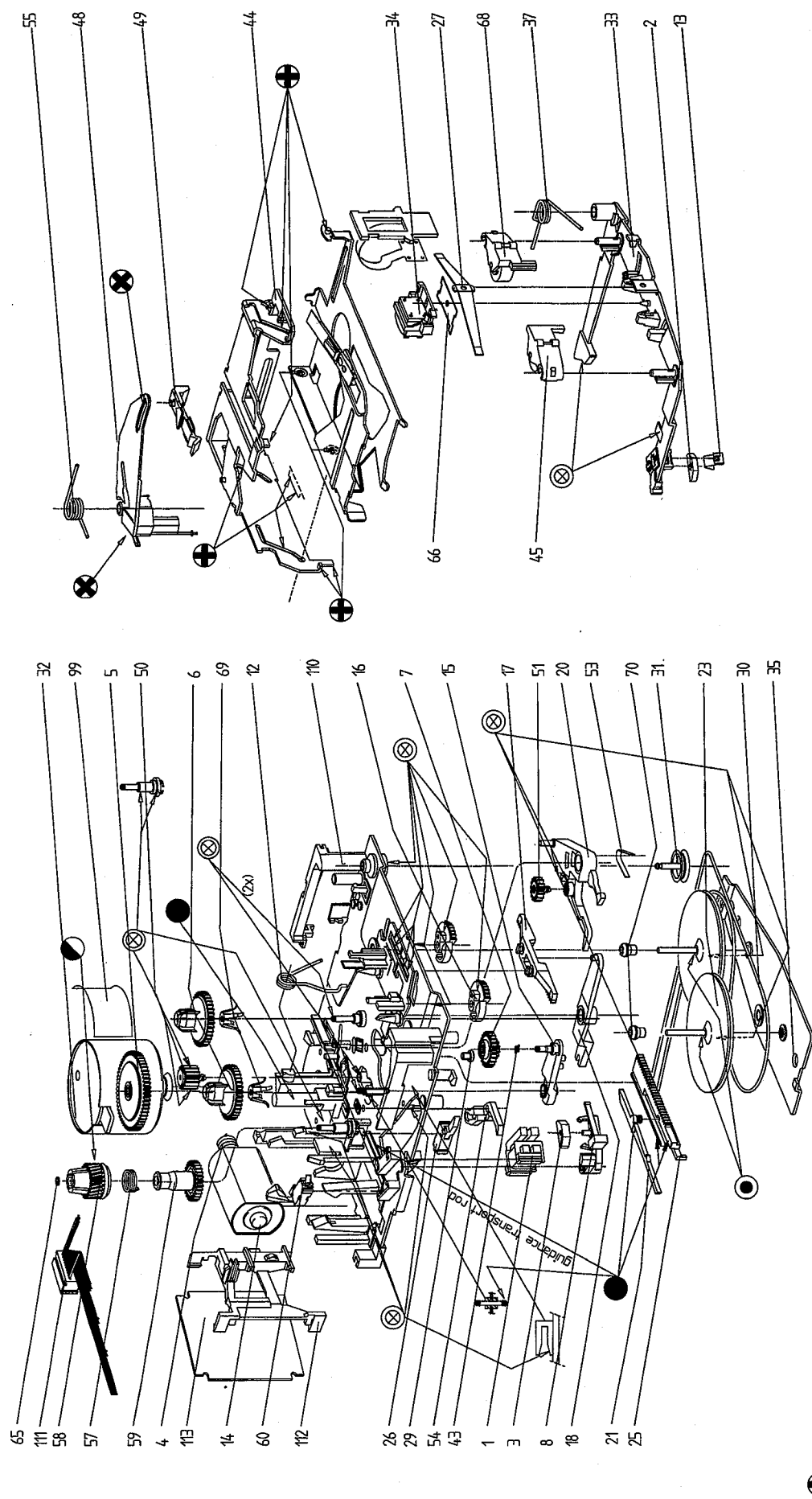
1002 A 1	2413 A 1	3409 A 1
1003 A 1	2414 A 1	3410 A 1
2207 A 1	2415 A 1	3411 A 1
2401 A 1	3401 A 1	3412 A 1
2402 A 1	3402 A 1	5411 A 1
2403 A 1	3403 A 1	5412 A 1
2404 A 1	3404 A 1	7401 A 1
2405 A 1	3405 A 1	7402 A 1
2406 A 1	3406 A 1	7411 A 1
2407 A 1	3407 A 1	7412 A 1
2411 A 1	3408 A 1	



CONNECTORS



Front of Radio ↓



MECHANICAL PARTS

1	4822 281 11051	DOUBLE
2	4822 404 21083	ANCHOR ON SUPPORT 33
3	4822 404 21084	ANCHOR IN HOLDER 8
5	4822 522 32868	WHEEL IDLER
6	4822 528 10776	CARRIER
7	4822 528 70658	ASSY
8	4822 404 21087	FOR ANCHOR 2
1	4822 492 70556	FOR ANCHOR 2
14	4822 361 30297	SERVO ASSY
16	4822 522 32869	NORMAL/REVERSE
17	4822 404 21089	DRIVING 16
20	4822 404 21086	ASSY SERVO GEARWHEEL
23	4822 528 81378	FLYWHEEL
26	4822 277 11215	ON/OFF
27	4822 492 70557	FOR PRES. ROLLER 45
29	4822 502 12548	FIX MOTOR 32
30	4822 358 31053	BELT, DRIVING
31	4822 528 81144	DIVERTING BELT
32	4822 361 30294	CAPSTAN
33	4822 404 21088	FOR HEAD,PRES.ROLLR
34	4822 249 30157	WITH FLEXPRINT
44	4822 466 82631	FOR CASSETTE
45	4822 528 81377	REVERSE
48	4822 404 21091	EJECT
49	4822 404 21092	HOLDING CASSETTE
50	4822 522 32871	COUPLING
59	4822 522 10435	ASSY
60	4822 277 11216	ME/CR
65	4822 532 52348	FOR CARRIER CLUTCH
68	4822 528 81449	NORMAL
69	4822 492 70926	UNDER CARRIER
70	4822 520 30539	FOR FLYWHEEL
111	4822 321 61954	CABLE, CONNECT
112	4822 256 92048	FOR PCB
113	4822 214 52077	PCB KOMPL.

ELECTRICAL PARTS

2207	5322 122 32654	22NF10%X7R	63V
2401	4822 124 22748	10UF	10V
2402	4822 122 33127	2,2NF10%X7R	63V
2403	4822 122 33178	1NF 20% X7R	50V
2404	4822 124 23279	22UF20%	16V
2405	5322 122 32654	22NF10%X7R	63V
2406	4822 124 41013	2,2UF	25V
2407	5322 122 32654	22NF10%X7R	63V
2411	4822 122 33177	10NF 20% X7R	50V
2413	4822 124 23279	22UF20%	16V
2414	5322 122 32654	22NF10%X7R	63V
3401	4822 051 20822	8K20	5% 0,1W
3402	4822 051 20102	1K00	5% 0,1W
3403	4822 051 20332	3K30	5% 0,1W
3404	4822 051 20472	4K70	5% 0,1W
3405	4822 116 40241	3K6 PTC	
3406	4822 051 20123	12K00	5% 0,1W
3407	4822 051 20243	24K00	5% 0,1W
3408	4822 053 10399	39R00	5% 1W
3409	5322 101 11014	5K POTMETER	
3410	4822 051 20153	15K00	5% 0,1W
3411	4822 051 20689	68R00	5% 0,1W
3412	4822 051 20183	18K00	5% 0,1W
5411	4822 050 21008	1R00	1% 0,6W
5412	4822 050 21008	1R00	1% 0,6W
7401	4822 209 32207	TDA3611	
7411	4822 130 32911	BYV10-30	
7412	4822 130 32911	BYV10-30	
AIDS AND TOOLS			
100	4822 390 10107	ISOFLEX PDP65	
101	4822 390 20128	TOPAS L30	
103	4822 390 10123	MOBIL OIL SHC 634	
104	4822 390 20027	GLEITMO 805K	
105	4822 390 20128	L30 TF	
107	4822 390 20139	GLEITMO 585K	

